

July 23, 1956

Budd's Bid for Lightweight Market . . . p. 38

RAILWAY AGE

WORKBOOK OF THE RAILWAYS

THE INDUSTRY'S ONLY WEEKLY NEWSMAGAZINE

Wrought Iron Pipe's built-in protection ...always "on guard" against corrosion

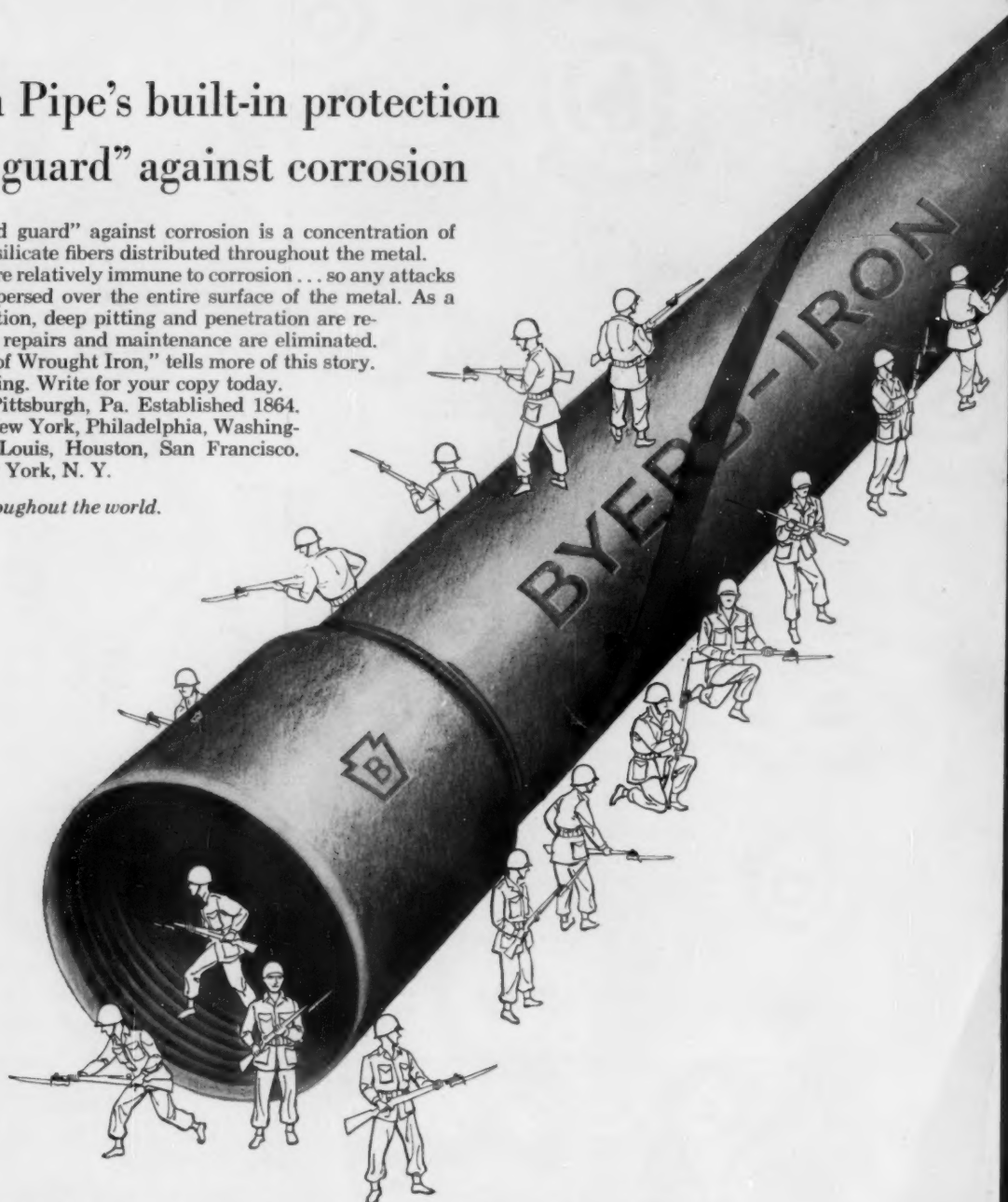
Wrought iron pipe's "armed guard" against corrosion is a concentration of thousands of glass-like iron silicate fibers distributed throughout the metal.

These iron silicate fibers are relatively immune to corrosion . . . so any attacks by corrosion are evenly dispersed over the entire surface of the metal. As a result of this built-in protection, deep pitting and penetration are repelled . . . costly premature repairs and maintenance are eliminated.

Our booklet, "The ABC's of Wrought Iron," tells more of this story. You'll find it profitable reading. Write for your copy today.

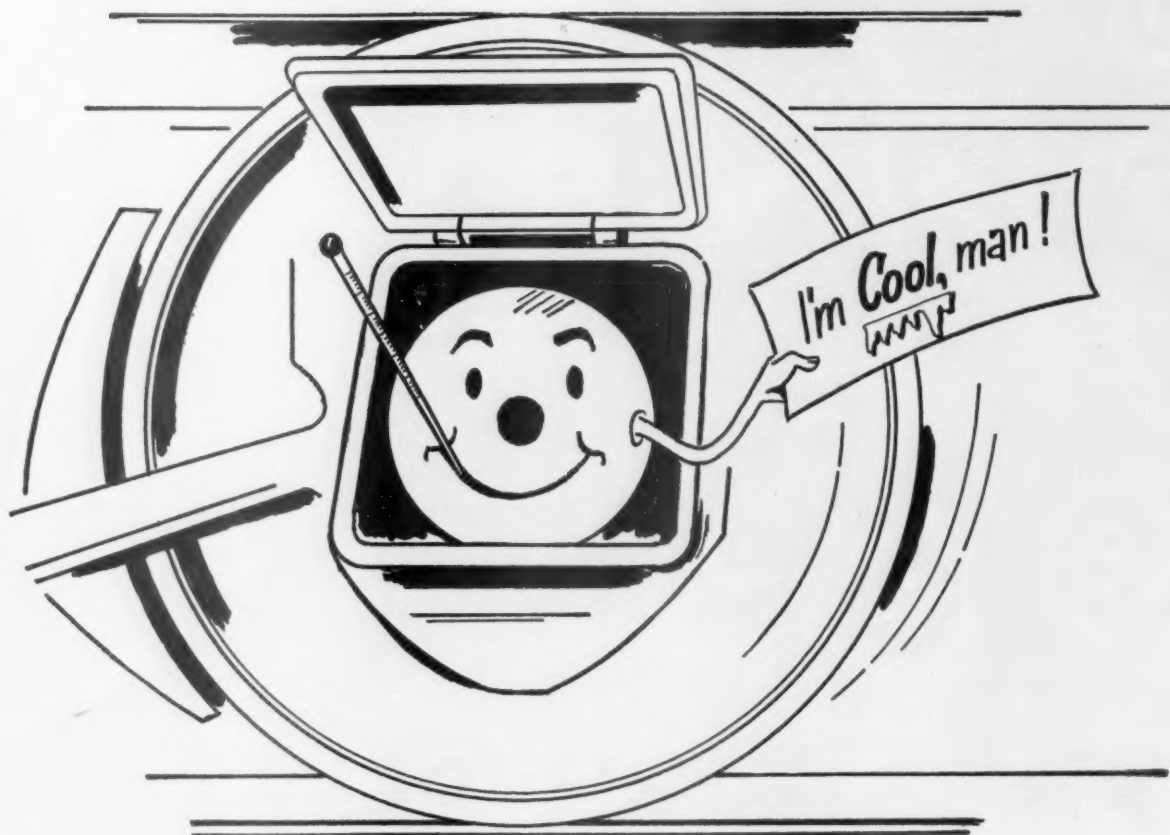
A. M. Byers Company, Pittsburgh, Pa. Established 1864.
Division Offices in Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco.
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BYERS *Wrought Iron Tubular and Hot Rolled Products*

ALSO ELECTRIC FURNACE QUALITY STEEL PRODUCTS



IMPROVE your "cool box" record

FOR "COOL BOXES" instead of "hot boxes," back good supervision and maintenance practices with a premium car oil—*Texaco Car Oil 1960*.

A growing list of leading railroads continue to get outstanding results from *Texaco Car Oil 1960*—the only premium quality car oil—proven by millions of car miles.

It is still not too late to benefit through

this hot box season by starting a "free oiling" program with *Texaco Car Oil 1960*.

A Texaco Railway Lubrication Engineer will gladly give you all the facts. Just call the nearest Texaco Railway Sales Office in New York, Chicago, San Francisco, St. Paul, St. Louis or Atlanta. Or write:

The Texas Company, *Railway Sales Division*, 135 East 42nd Street, New York 17, New York.



TEXACO Railroad Lubricants
AND SYSTEMATIC ENGINEERING SERVICE

IN ALL
48 STATES



How Mayari R Helped Shave Deadweight from New Haven Electrics

Ten of these new rectifier-type electric locomotives recently started service on the New York, New Haven and Hartford Railroad. Built by General Electric at Erie, Pa., they pack 29 pct more weight on drivers, yet weigh 19 pct less overall, than locomotives built for the same service in 1937.

This gain came, of course, from modern design, part and parcel of which was the extensive use of Mayari R. The yield point of 50,000 psi of this high-strength, low-alloy steel gave GE engineers a very attractive strength-to-weight ratio to work with. Accordingly they used Mayari R in many of the structural components: side sheets, joists, gus-



sets, platform, main and side sills, top and bottom plates and needle beam plates, to name a few.

Other railroads and builders have found that Mayari R's superior properties bring equally beneficial results in diesels, freight cars, passenger and head-end cars, bridges

— in fact in any application where less weight can mean economy. Further, Mayari R resists atmospheric corrosion 5 to 6 times longer than carbon steel, and can be welded and worked just about as readily.

If you'd like to know more about this versatile, increasingly popular steel, Catalog 353 will prove helpful. Along with technical data, this book contains a section devoted entirely to railroad applications. You can get a copy through the nearest Bethlehem office.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation

Mayari R... High-Strength, Corrosion-Resisting Steel



How UNION C.T.C. helped the Lackawanna R. R. save over \$3,000,000 in flood damage repairs!

When Hurricane Diane had come and gone last year, the Delaware, Lackawanna and Western Railroad Co. estimated its storm damage would be well over ten million dollars.

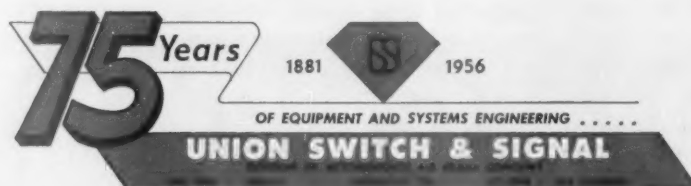
Later it was discovered that more than two million dollars could be saved by restoring only two of the three main tracks of a 10-mile section. Operating capacity was achieved by installing UNION Centralized Traffic Control with reverse signaling on this section.

Another expenditure of more than one mil-

lion dollars for bridge and retaining wall construction was avoided by track rearrangement with Centralized Traffic Control where a four-hundred-foot, four-span bridge had been destroyed.

These substantial savings point up the value of using Centralized Traffic Control to obtain maximum operating capacity with a minimum number of tracks.

UNION Traffic Control Engineers are available to help you plan for maximum possible savings. Ask our nearest office for details.



RAILWAY AGE

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Workbook of the Railways

Vol. 141, No. 4
July 23, 1956

CONTENTS and Week at a Glance

Railroad passenger advertising . . .

. . . is getting some results as it takes on many guises on different roads in trying to offset rising expenditures by competitors and an apparent national feeling that riding railroads is out of style. . . . p.7

FORUM: Opposition to further socialistic . . .

. . . inroads into the electric power industry stems in part from skillful use of public relations by the utilities. Railroads, comparatively less successful in recruiting opponents to socialization of transportation, can learn valuable lessons from the experience of the public utilities. . . . p.37

Budd's bid for the lightweight market . . .

. . . called "Pioneer III," development of which was reported in Railway Age last February 20, weighs only 595 lb per passenger seat. The car—which, among other things, has new lightweight trucks—is designed for lower mileage services in which profits are not possible because of the operating and fixed costs of conventional equipment. . . . p.38

Deluxe throughout is an apt . . .

. . . description of the recently opened Fort Lauderdale, Fla., station constructed by the Florida East Coast for that growing prosperous town. . . . p.43

Citico, latest of the Southern's . . .

. . . new retarder yards features four-channel radio, a two-mile pneumatic tube for waybills, motion picture film tied in with a television number grabber to provide car movement records, and mercury vapor street-lighting lamps to provide "daylight" after dark. Operating costs related to car through-put have been cut and average yard time reduced by five hours. . . . p.44

A new accounting setup . . .

. . . following a pattern established in a pilot installation at Trenton, is being developed by the Pennsylvania for possible systemwide application. Among many benefits is the time saved for freight agents to "get out and sell." . . . p.53

"horse and buggy" leadership in an atomic age

by Hungerford



We will be glad to send you enlarged copies of this Hungerford cartoon (without advertising copy) for posting on your office and shop bulletin boards, or a cut for your company magazine, at cost.

Edgewater

Rolled Steel Wheels



10' Freight Cars



Passenger Cars



Diesel Locomotives



Edgewater Steel Company

PITTSBURGH 30, PA.

Current Statistics

Operating revenues, five months	
1956	\$4,338,808,871
1955	3,956,975,949
Operating expenses, five months	
1956	\$3,354,150,312
1955	3,007,441,074
Taxes, five months	
1956	\$462,347,727
1955	421,778,876
Net railway operating income, five months	
1956	\$415,532,086
1955	423,676,314
Net income, estimated, five months	
1956	\$322,000,000
1955	328,000,000
Average price 20 railroad stocks	
July 17, 1956	104.25
July 19, 1955	95.09
Carloadings revenue freight	
Twenty-seven weeks, 1956 ..	19,405,709
Twenty-seven weeks, 1955 ..	18,529,086
Average daily freight car surplus	
Wk. ended July 14, 1956 ..	25,122
Wk. ended July 16, 1955 ..	8,421
Average daily freight car shortage	
Wk. ended July 14, 1956 ..	3,975
Wk. ended July 16, 1955 ..	13,781
Freight cars on order	
July 1, 1956	129,409
July 1, 1955	27,102
Freight cars delivered	
Six months, 1956	33,189
Six months, 1955	17,111
Average number railroad employees	
Mid-June 1956	1,074,979
Mid-June 1955	1,073,847

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS (A.B.P.) AND AUDIT BUREAU OF CIRCULATION (A. B. C.) AND IS INDEXED BY THE INDUSTRIAL ARTS INDEX, THE ENGINEERING INDEX SERVICE AND THE PUBLIC AFFAIRS INFORMATION SERVICE. RAILWAY AGE, ESTABLISHED IN 1856, INCORPORATES THE RAILWAY REVIEW, THE RAILROAD GAZETTE, AND THE RAILWAY AGE GAZETTE. NAME REGISTERED IN U. S. PATENT OFFICE AND TRADE MARK OFFICE IN CANADA.

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Week at a Glance CONTINUED

BRIEFS

Trucking industry claim . . .

. . . that it is "threatened by harmful and discriminatory transportation laws" is now being heard each week by a nationwide radio audience. A series of 21 broadcasts on NBC's "Monitor" radio program is bringing the truckers' views to the public.

Opposition to mail-pay increase . . .

. . . being sought by 29 eastern railroads has been registered by southern and western railroads. At a recent Chicago meeting the latter two groups of railroads voted to make their own study of the situation. They, thinking the eastern request too high, may file a separate petition with the ICC for a "reasonable" increase.

Crippling effect of the steel strike . . .

. . . was becoming more intense and increasingly more far-reaching as it concluded three weeks' duration at press time. Indicative of the severity is the report from the Railroad Retirement Board that 57,393 rail employees have been furloughed because of the strike. Meanwhile, the Pennsylvania announced withdrawal of some freight service in addition to annulment of "The Fort Hayes" between Logansport, Ind., and Columbus, Ohio.

More barge freight will move . . .

. . . over the country's inland waterways this year than in any previous year, if the pace set by that type of traffic during the first half of 1955 is maintained for the rest of the year. In 1955, 87.5 million ton-miles of freight moved on inland waterways.

Railroad employees now operate . . .

. . . over 700 credit unions, the Credit Union National Association says. Credit unions in North America total over 21,500, with some 10 million members.

Spectacular advertising displays . . .

. . . will be erected in the main concourses of the Pennsylvania's stations. Contract to that effect was recently signed by the railroad and Indoorama, Inc.



Welding N-S-F to the underframe in new C&O boxcar at ACF Industries, St. Louis.

N-S-F* helps THE BUILD FOR THE FUTURE



Panels of NAILABLE STEEL FLOORING at doorway of a C&O boxcar under construction. N-S-F is supplied in panels for quick, economical installation.

With cars equipped with NAILABLE STEEL FLOORING, progressive railroads can furnish shippers with Class A cars for all kinds of lading. And, moreover, this modern flooring—in both new and used freight cars—can effect considerable savings over the years in both original investment and maintenance costs.

Up-to-date performance and cost studies are available from our representatives in Atlanta, Chicago, Denver, Montreal, New York, Omaha, Philadelphia, St. Louis and San Francisco.

*N-S-F (TM): NAILABLE STEEL FLOORING
Made and sold only by—

STRAN-STEEL CORPORATION

Ecorse, Detroit 29, Michigan • A Unit of



EE-55-6A

RR ADVERTISING DRAWS PASSENGERS BY . . .

Reshaping Public Opinion

Is there a national stereotype of the "typical" railroad traveler as a drab relic of the McKinley era? Has the public developed a picture image of rail patrons as staid and stodgy plodders while thinking of the men who fly as live-wire, up-and-coming personalities?

Judging from a survey started by the New York Central and its advertising agency last year, that's just the impression that does prevail and it's the key to the Central's current advertising campaign.

Designed to counteract the discovery that "it has become unfashionable to travel by rail," the emphasis in the campaign ads is on young people, bright and cheery men and women who obviously enjoy their trip and whose appearance defies the label "fuddy duddy."

"If grandma and grandpa are still riding on the Central, you can't tell it from our advertising," Paul M.

Lund, account executive for the Central at J. Walter Thompson agency, states.

Opinions on how passenger travel ought to be advertised are about as numerous as the railroads themselves but in the words of one road's advertising chief "many of our American railroads don't come anywhere near fully exploiting their potential."

He thinks "it's high time for America's railroads to wake up to this passenger problem and to get busy. The traditions of the 1800s have no place in today's dynamic, atomic era. We must go forward with the times and any mind that is closed to new ideas is closed to opportunity."

"Accentuate the positive" is the theme on the Santa Fe, according to A. A. Dailey, general advertising manager. "We devote our advertising to telling people what the Santa Fe can do for them; we do not use it and we have no intention of using it to point out what other forms of transportation cannot offer."

That approach contrasts with the "hard sell" philosophy of the Central of Georgia's Owen J. Murry, assistant to the president, who feels that the threat from other carriers and the private car "must be met with every means at our disposal."

This road, an advocate of television and radio spot announcements in addition to newspaper layouts, ran a series of ads this Spring challenging would-be travelers to "compare" tabulated train, airplane and bus fares and auto travel costs, supplementing this with elaborations on rail travel comforts.

Destination and price are stressed by many roads, especially those serving resort or vacation spots, but the Chesapeake & Ohio adds "convenience" to these where it can.

"Our passenger research has shown that travel is from the smaller city to the bigger city and return," C&O Ad Manager W.S. Jackson and his

ROBERT R. YOUNG URGED \$100 MILLION CAMPAIGN

"The Association of American Railroads has a perfect case to lay before the American people and not one out of a thousand of our riders knows it."

"The New York Central would like to join the 131 Class I railroads of America in a great and constructive advertising campaign of public information . . ."

"One hundred million dollars for paid advertising in newspapers and magazines, on television and radio, would not be too much to return sanity, through public understanding, to transportation."—From a statement by Robert R. Young, chairman of the board, New York Central.

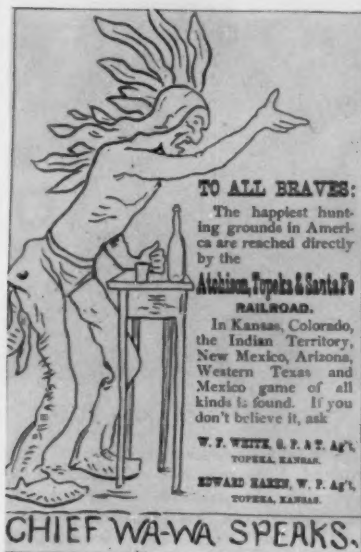
assistant, Pier Clifford, report. "Thus we sell the name of the bigger city as an inducement."

C&O ads, however, avoid stress on safety, believing that "differences in safety between the common carriers are negligible, while auto accidents 'always happen to the other guy.'" Here again, Mr. Murry holds an opposite view.

Comfort and dependability, two factors pretty highly regarded on most roads, are also soft-pedaled on the C&O, largely because of a feeling that patrons who normally do not use the railroads are apt to see them at their worst—using old equipment or running late—during peak holiday travel periods.

The New York Central also steers clear of the safety and dependability angles, but on the theory that they "only tend to reinforce the image of rail travelers as old-fashioned."

The problem of budgetary limits is analyzed by C.H. Ramsdell, New York Central advertising director, who notes that while national advertising expenditures climbed 96% between 1947 and 1954, railroad advertising spending "remained virtually unchanged." Airline advertising in the period rose 162% in the



"BUILT AROUND INDIANS" from the start, Santa Fe advertising blends the road's traditions with effective merchandising. This ad, first ever run by the Santa Fe, appeared in an 1878 publication.

RAILWAY AGE EDITORIAL INSPIRES TRAFFIC LIBRARY

Inspired in part by an editorial in the October 17, 1955, issue of *Railway Age* titled "Needed: Modern Transportation Text Books," the Columbus chapter of the Delta Nu Alpha transportation fraternity has authorized an expenditure of at least \$300 a year to purchase useful transportation books—to be made available for loan to members through the city's Chamber of Commerce library. Lloyd Siberell, agent,

Norfolk & Western, is chairman of the chapter's Library Foundation Committee.

The *Railway Age* editorial charged that most transportation literature is old-fashioned and fails to reflect the fact that "there boils a rowdy, disorderly, patternless, bitterly competitive business of transportation" and that "the old rules, the old meanings are gone, or going" under conditions as they are today.

period, he said, while bus advertising went up 60%.

"Just by staying even in dollars," Mr. Ramsdell maintains, "railroads have lost ground in impressions, thanks to inflation. To buy the same relative advertising impact in 1954 that they bought in 1947, they would have had to spend \$26.6 million instead of the \$16.7 million they actually did spend."

While the New York Central's advertising campaign started fresh after an interruption brought on by management changes, the Santa Fe's current theme is a revision of a traditional style "built around Indians and colorful vacation areas."

Where the "pitch" was on prestige and the "hard sell" was strictly avoided, Mr. Dailey wrote recently, the Santa Fe realized that it had to compete with the airlines and family car to keep up its passenger revenues. It even felt it had to offset an impression that it was cheaper to go by plane or car and revised its advertising techniques to blend its basic philosophies with more effective ways of selling.

"We do not try to sell speed," Mr. Dailey relates, "we seldom mention it. We do not talk about 'safe and sane' journeys—only the dependability of departure and on-

time arrival." This attitude was worked into the road's ads with a stress on simplicity: "Our ads are rugged and vigorous rather than slick and effete," Mr. Dailey states. "The copy is bold and terse rather than clever and contrived" and its message is comfort, service and economy.

The Wabash approach, as Advertising Director L.A. Brown was recently quoted, dramatizes the postwar union of its traditional services with modern equipment, in ads that often reflect a "homely" flavor.

According to one road's advertising director, railroad "salesmanship" is awful and most of the advertising is just as bad but many roads—such as the Seaboard which boomed ticket sales with ads featuring new Florida-bound equipment—report success in their efforts. Artistically, too, some roads are felt to be doing good work. How many travelers it drew is unmeasurable, but a New Haven ad showing a child traveling alone and safe on one of its trains, with no copy other than the road's name, won at least one advertising award.

Nevertheless, this advertising director said much of the railroad's problem in advertising is that they don't know what they want.

that "the heavy residual fuel will not idle a diesel without 'souping' which occurs when the engine does not completely burn fuel, causing oil to run down outside the stack and build up carbon in the engine. Under heavy load, this carbon would be blown out the stack in the form of burning particles and could create a dangerous fire hazard. Although not usable at low temperatures, the heavy fuel contains more BTU per pound and therefore produces relatively more horsepower than its higher-priced distillate counterpart."

The system was bench tested extensively before installation on an Electro-Motive GP7 1,500-hp diesel locomotive for road tests. For compact fuel storage, the end of the locomotive's regular 1,600-gal fuel tank was removed. A partition could then be welded in it to make two separate containers—one holding 500 gal of distillate and the other holding 1,100 gal of residual fuel.

ICC Advised to Permit Intercoastal Barge Service

The Interstate Commerce Commission has been advised by Examiner Henry C. Lawton that it should reverse a 1954 decision and permit
(Continued on page 10)



Unloads Grain Cars Fast

Tilted sidewise 15 degrees and then rocked fore and aft 40 degrees, a grain car is unloaded in four-and-a-half minutes in this Link-Belt installation at the Cargill, Inc., terminal at Portland, and at a similar one in Seattle. One man operates the device at a control table at right. As many as 10 cars in an hour can be spotted and emptied, the grain being discharged into a hopper and then moved on conveyor belt to storage bins.

C&O to Cut Costs With Dual Fuel

Chesapeake & Ohio road diesels will be equipped to burn heavy, lower grade fuels through use of a dual fuel system developed by the road's test department at Huntington, W. Va.

Use of the heavy fuel will cut fuel costs by two cents a gallon.

C. M. Angell, C&O engineer of tests, reports that the heavy fuel is put into use after the engine has

reached normal operating temperatures. "The switch from normal, high-grade fuel is made when the throttle of the locomotive is advanced from the fourth to the fifth notch. At higher operating speeds, the heavy, cheaper fuel takes over and when the speed is dropped back again, an automatic changeover takes place and the regular distillate fuel is used again." He went on to say

Carloadings Come Back Up.—

Loadings of revenue freight in the week ended July 14 totaled 619,988 cars, the Association of American Railroads announced on July 19. This was an increase of 141,691 cars, or 29.6%, compared with the previous week; a decrease of 174,150 cars, or 21.9%, compared with the corresponding week last year; and a decrease of 74,557 cars, or 10.7%, compared with the equivalent 1954 week.

Loadings of revenue freight for the week ended July 7 totaled 478,297 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, July 7

District	1956	1955	1954
Eastern	75,792	101,982	86,711
Allegheny	77,522	126,729	102,964
Pacahentos	17,908	48,442	37,013
Southern	89,518	101,256	91,011
Northwestern	65,430	110,931	97,902
Central Western	100,447	105,876	104,805
Southwestern	51,660	53,776	49,156
Total Western			
Districts	217,557	270,583	251,863
Total All Roads	478,297	648,992	569,562

Commodities:			
Grain and grain products	54,719	60,253	53,637
Livestock	5,506	4,733	5,601
Coal	24,097	101,904	78,818
Coke	4,155	10,535	7,048
Forest Products	35,172	33,764	28,857
Ore	31,255	75,736	65,755
Merchandise I.C.I.	49,187	55,880	49,374
Miscellaneous	274,206	306,165	280,472
July 7	478,297	648,992	569,562
June 30	755,292	695,841	618,559
June 23	799,461	794,427	713,160
June 16	801,431	779,957	707,237
June 9	787,075	781,938	697,583

Cumulative total,
27 weeks ... 19,405,709 18,529,086 17,071,388

In Canada.—Carloadings for the nine-day period ended June 30 totaled 119,451 cars, compared with 92,991 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
June 30, 1956	119,451	45,212
June 30, 1955	118,611	42,040
Cumulative Totals:		
June 30, 1956	2,101,962	893,999
June 30, 1955	1,892,182	810,518

New Equipment**FREIGHT-TRAIN CARS**

► **June Orders Up, Deliveries Decline.**—New freight cars ordered in June totaled 2,859, compared with 2,403 in May and 13,365 in June 1955 (when railroads launched a heavy buying program), ARCI and AAR report; deliveries of new cars in June dropped to 5,550, compared with 6,667 in May and 3,015 in June 1955; July 1 backlog was 129,409 cars, compared with 133,072 on June 1 and 27,102 on July 1, 1955.

Type	Ordered June '56	Delivered June '56	On Order July 1, '56
Box—Plain	248	3,297	47,117
Box—Auto	0	0	2,100
Flat	0	165	5,480
Gondola	415	362	12,563
Hopper	600	737	39,573
Covered Hopper	652	305	6,014
Refrigerator	400	131	6,431
Stock	0	0	0
Tank	409	482	7,433
Caboose	0	25	184
Other	135	46	2,514
TOTAL	2,859	5,550	129,409
Car Builders	2,829	3,261	60,804
Company Shops	30	2,289	68,605

► **Chicago & North Western.**—Increased by 15 units a previous order for 50-ton box cars to be built by Pullman-Standard.

► **Illinois Central.**—Ordered 200 70-ton covered hopper cars, Pullman-Standard; estimated cost \$1,649,000; delivery expected second quarter 1957.

► **Norfolk & Western.**—Ordered 25 50-ton box cars, Pullman-Standard; delivery, originally scheduled for next December, may be delayed because of steel strike.

► **Pittsburgh & West Virginia.**—Ordered 100 70-ton gondola cars, Pullman-Standard; this replaces previous order for 100 50-ton box cars placed with same builder (Railway Age, Dec. 19, 1955, p. 10).

► **Rock Island.**—Ordered an additional 300 70-ton hopper cars, Pullman-Standard; delivery anticipated next year.

PASSENGER-TRAIN CARS

► **Canadian National.**—Ordered five dinette cars, Canadian Car & Foundry; approximate cost \$1,090,000; delivery scheduled for October 1957; cars, similar to six already in service, will offer snacks or full course dinners.

LOCOMOTIVES

► **Kansas, Oklahoma & Gulf.**—Ordered two 1,750-hp general purpose diesel-electric units, Electro-Motive; approximate cost \$350,000; delivery scheduled for June 1957; units will be placed in equipment pool for use by KO&G and its two affiliates: the Midland Valley and the Oklahoma City-Ada-Atoka.

(more on next page)

RAILWAYS IN THE MARKET—THIS WEEK

CONTINUED

Maintenance Expenditures

► *Up 9.7% in March.*—Expenditures by Class I roads for maintenance of equipment, way and structures were up \$24.9 million, or 9.7%, in March, compared with March 1955, ICC Bureau of Transport Economics & Statistics said in report summarized below:

	March '56	March '55	% Change
Maintenance of Way & Structures	\$115,318,288	\$106,540,273	+ 8.2
Maintenance of Equipment	162,180,316	146,013,636	+11.1
Totals	277,498,604	252,553,909	+ 9.7

New Facilities

► *Chicago Heights Terminal Transfer-Chicago & Eastern Illinois.*—Constructing new freight yard at Chicago Heights, Ill., to service new Ford Motor Company stamping plant, \$400,000.

► *Frisco.*—Following construction projects have been authorized: Installation of power switches and signals, St. Louis (\$158,000); new track scale at St. Louis (\$61,000).

► *Gulf, Mobile & Ohio.*—Will enlarge freight yard facilities at Tuscaloosa, Ala., estimated cost \$100,000, including: erection of new 5,200-sq-ft warehouse and office building; demolition of present warehouse; and extending existing yard tracks.

► *Long Island.*—Converting 15.7 miles of double- and four-track line from Jamaica to Hicksville to double-signaling to permit operation of trains on all tracks in either direction; costing \$750,000, project will be completed in little more than one year, and is intended to speed up express commutation schedules and permit more local stops.

► *Nashville, Chattanooga & St. Louis.*—Work will begin shortly on new \$787,200 freight house at Park Hills Yard, Atlanta; the Louisville & Nashville also will use the facility.

► *Northern Alberta.*—Will spend more than \$4 million on system improvements including strengthening piers of Peace River bridge and Smoky River bridge (\$348,000); rebuilding 28 trestle bridges (\$754,000); improving roadbeds (\$880,000); renewing track and switch ties (\$675,000); and extending commercial telegraph facilities (\$532,000); additionally, is studying plans for diesel-servicing shops at Dunvegan yards, Edmonton (\$265,000), in anticipation of intended dieselization; improving communication system by stringing two additional wires between Edmonton and McLennan, \$291,000.

► *Ontario Northland.*—New construction projects include: diesel locomotive shelter building at Moosonee, Ont., \$137,000; communications building at New Liskeard, \$116,000; power house building at Cochrane, \$160,000; boat shelter and dock at Temagami, \$22,000; concrete platform and coach tracks at Timmins, \$23,000; extend passing tracks and install new yard tracks at 11 points \$300,000.

► *Southern Pacific.*—Is "daylighting" its 800-ft tunnel 12 on Coast Line at Sudden, Cal., estimated cost \$200,000; project will take about six-months to complete.

(Continued from page 8)

Alaska Freight Lines to provide an inter-coastal barge service. The advice came in the examiner's proposed report on further hearing in W-1055 (Sub-No. 1).

His recommendation is that Alaska be granted a certificate to operate as a common carrier by water in the transportation of commodities generally (other than livestock and sulphur in bulk) between Seattle, Wash., and Portland, Ore., on the one hand, and New Orleans, La., and Texas Gulf ports on the other, via the Panama Canal. Alaska's application is opposed by railroads in western, southern and central territories.

As a condition precedent to issuance of the certificate he recommends, the examiner would require Alaska "to acquire and own, with title in its corporate name, not less than three towing vessels and six barges of not less than 2,000 tons capacity." The 1954 decision which denied the application was a two-to-one ruling by Division 4 (Railway Age, Sept. 6, 1954, p. 56).

C&O Will Set Up Car Tracing Center

A freight-car-movement information center will be set up by the Chesapeake & Ohio about the end of the year at Huntington, W. Va., M. I. Dunn, vice-president, operations, has announced.

Located in the Chafin Building, recently purchased by the road in downtown Huntington, the center will employ a staff of 40.

After it is established, Mr. Dunn said, "it will be possible for a shipper to learn . . . exactly where his car of freight is in transit, either on C&O or off-line. Information compiled in Huntington will be transmitted directly to C&O's Univac computing center in Cleveland so that statistics as to freight movements can be available within minutes."

U.S. Chamber Transport Group Has 4 Railroaders

Four railroad presidents are among the 46 members of the Transportation and Communication Committee of the Chamber of Commerce of the United States for 1956-57. The committee's chairman is J. H.

Carmichael, president of Capital Airlines, who is also a vice-president of the chamber.

Railroad presidents on the committee are Harry A. DeButts of the Southern; R. H. Smith of the Norfolk & Western; Arthur E. Stoddard of the Union Pacific; and F. B. Whitman of the Western Pacific. A. L. Hammell, president Railway Express Agency, is also a member.

The committee will hold its first meeting in Washington, August 29-30. Chairman Carmichael expects that much of its time will be devoted "to issues raised by the President's Cabinet Committee Report on Transportation, postal rate policies, economic and safety regulation of air transportation, and merchant marine legislation."

April Accidents

The ICC has issued its Bureau of Transport Economics and Statistics' preliminary summary of railroad accidents in April and this year's first four months. The compilation, subject to revision, follows:

Item	Month of		4 months ended with	
	1956	1955	April 1956	April 1955
Number of train accidents*	722	605	3,114	2,597
Number of accidents resulting in casualties ..	45	25	182	139
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed	59	54	203	186
Injured	69	73	215	214
Passengers on trains:				
(a) In train accidents*				
Killed	2	34	43	165
Injured	2	34	363	165
(b) In train-service accidents				
Killed			4	2
Injured	132	145	557	555
Travelers not on trains:				
Killed		1		4
Injured	64	59	304	324
Employees on duty:				
Killed	23	18	84	76
Injured	1,399	1,364	6,014	5,391
All other nontrespassers**				
Killed	94	99	488	467
Injured	384	358	1,928	1,872
Total - All classes of persons:				
Killed	176	162	822	735
Injured	2,050	2,033	9,581	8,521

* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former caused damage of \$375 or more to railway property. Only a minor part of the total accidents result in casualties to persons, as noted above.

** Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties for all classes of persons, including both trespassers and nontrespassers, were as follows:

Persons:				
Killed	95	83	477	432
Injured	259	221	1,344	1,316



Unit Packing Speeds Nuts and Bolts Shipments

Sixteen boxes at a time are moved in this strapped load packed under new specifications for bulk shipments of bolts, nuts and rivets (I-50A) prepared by National Wood Box Association and AAR's committee on material handling, Purchases and Stores Division. Sizes of nailed wooden boxes

are fixed in specifications, and quantities are standardized, each box being designed to carry loads up to 200 lb. Carload of fastenings normally took 16 man-hours to unload, but one man using fork truck as above can unload car loaded with specified units in just 40 minutes.

17 Roads Paid Safety Fines in June

Fourteen railroads in June paid fines totaling \$4,900, plus costs, on 49 counts of violation of the Safety Appliance Acts. This was reported by the Interstate Commerce Commission which also reported June fines totaling \$500 paid by two roads for violations of the Hours of Service Law, and a \$1,000 payment on 10 counts for violations of the Accident Reports Act.

The latter was paid by the Southern Pacific. Highest payment for violations of the Safety Appliance Acts was \$700, paid by each of four roads—the North Western, the Milwaukee, the Rock Island, and the New York Central. The fines for violations of the Hours of Service Law were paid by the Illinois Central (\$300), and the Peoria Terminal (\$200).

"Equal Chance" Asked for Railroads

Given "only the chance," railroads will contribute even more to the country's future than they have in the past, AAR President William T. Faricy told the St. Paul Chamber of Commerce July 20.

At ceremonies marking the 100th anniversary of the arrival of James J. Hill in the Minnesota community, whence "he pushed another railroad . . . to the shores of the Pacific," Mr. Faricy said:

"Railroads look ahead to the challenge of the future. They know the fundamental principles of the rail

method of transportation are, and will continue to be, essentially sound.

"The railroads believe that in time the present public policies of transportation which limit and restrict the full economic use of railroads will be corrected. . . . They neither ask, nor need, any favors, any subsidy. They do need, and they do ask, only the chance to compete on equal terms."

Milestones noted by Mr. Faricy in the railroads' postwar contributions to progress include achievement of 90% dieselization, "striking im-

BOTHERED BY REQUESTS FOR RELICS?

To furnish a middleman between railroads and people who want things from railroads—like old spikes, railroad emblems, matchbooks and diner dinnerware—a new company, called "Authentic Railroadiana Supply," has been organized, with headquarters at 1600 First National Bank Building, Peoria, Ill.

The organization — according to Dave L. Keith, one of its owners, who is also public relations representative for the Toledo, Peoria & Western—is an outgrowth of the mutual problems of two people: a man who wanted an ash tray from a railroad but couldn't figure out how to get one, and a railroad traffic man who was

worried because the morning mail brought so many requests for "this or that" from railroad fans.

ARS, says Mr. Keith, is equipped to buy items from railroads at cost and resell them to the public at a reasonable mark-up. In the case of modern items—like ash trays—ARS would order them when a railroad orders its own supplies for promotion, and thereby help reduce the unit cost to ARS customers.

Prospective ARS customers include model railroaders; railroad fans, patrons and customers; specialty collectors; and "the vast public that just likes an interesting item about the railroads."

provement" in passenger equipment, expanding use of electronics, superior track, and intensified car building. He called the need for more

freight cars "paramount," and said it has been estimated railroads will need an average of 75,000 cars a year for the next five years.

Developers Plan Annual Session

A National Industrial Development Exposition, described as the first of an annual series, will be held at the new Coliseum in New York City, November 12-16, with the objective of establishing "a national marketplace where corporation executives, industrial realtors, engineers and management consultants can explore the advantages offered

by state and regional development organizations."

Equal exhibit space allocations have been established for the 48 states, Puerto Rico, Hawaii, Alaska and the Canadian provinces, to forestall domination of the exposition by an individual exhibitor. Similar allocations, on a more restricted basis, will permit transporta-



Five-Day Week Means More Schooling on PRR

Newly appointed yardmasters were given special two-day course in various regions of the Pennsylvania recently to prepare them for organization changes necessary in switchover to five-day week. Here, a representative group from Northern Region attends class at Buffalo with trainmasters, assistant trainmasters and local chairmen of yardmasters union. At head table above are (left to right) J. J.

Delaney, transportation engineer; E. P. Adams, superintendent of transportation; A. M. Highgate, supervisor of personnel; and D. L. Moore, superintendent of personnel; R. H. Wachowiak, vice-president and general chairman, Railroad Yardmasters of America; and R. J. Sullivan, supervisor of labor relations. Messrs. Delaney, Adams, Highgate, Moore and Sullivan were lecturers for the course.

tion companies, utility companies and port authorities to participate.

A seminar program will feature prominent speakers from corporations with successful expansion records, government officials, economists, industrial realtors and planning experts.

The exhibit is sponsored by National Industrial Development Exposition, Inc., 356 West 58th st., New York 19.

In announcing preliminary plans, R. Y. Bartlett, president of the exposition corporation, said: "U. S. business now plans to spend almost \$39 billion for new plants and equipment in 1956, with a very high level of expenditures already planned for 1957, 1958 and 1959. Since the New York area has the largest concentration of management executives concerned with industrial expansion anywhere in the country, the convenience of the site and the fact that for the first time businessmen will have the opportunity to explore industrial advantages offered by the various states all under one roof and at one time are factors which augur well for a successful exposition."

Leo Haden Is Advisor To Chairman of the ICC

T. Leo Haden is now serving as advisor to Chairman Anthony F. Arpaia of the Interstate Commerce Commission. He assumed this position under a temporary appointment as consultant, after retiring June 30 from the position of senior examiner in the office of the chairman.

Mr. Haden's retirement, at the age of 70, came after 50 years of government service. He was a commission examiner for 28 years, during which time he served in the offices of four commission chairmen. He was retained as consultant "because of his long experience and wide knowledge of the commission's work," an announcement by Assistant Secretary R. J. Test said.

Alaska RR Plans for Industrial Development

A three-man committee headed by F. B. Stratton, director of industrial development of the Western Pacific, is studying the real estate and industrial development policies of the government-owned Alaska RR. The

other committee members are Robert Coote of the Department of the Interior, Washington, D. C., and Harold Brue, assistant real estate agent and contract agent of the railroad.

The committee was appointed by the Interior Department at the suggestion of R. N. Whitman, ARR general manager, to review the road's industrial development policies as a means of generating traffic for the line.

Supply Trade

John P. Cartwright, Washington district manager, **Joy Manufacturing Company**, has been appointed manager industrial sales, at Pittsburgh, and has been succeeded by **Arnott J. Lee**.

Millard S. May, sales manager, carbon products division, **Speer Carbon Company**, has been appointed manager technical services for the division, and has been succeeded by **Ives L. Harvey**. **C. S. Boland** has been named assistant sales manager of the division, and sales manager of flashlight and carbon products.

Sperry Rail Service has acquired Westinghouse Electric's type FE-1 railroad communications radio. The equipment will be manufactured, marketed and serviced as the Sperry radio system.

George W. Hoover, manufacturers' sales agent, New York, has been appointed by **E. V. Nielsen, Inc.**, to handle their new Service Bi-Way studder.

Paul O. Christy has been appointed sales representative of the **Brand-on Equipment Company**, on railroads in southwestern territory. Mr. Christy will handle sale of railroad Cocoon products and portable steel bulkheads in the area.

W. J. Trongeau has been appointed to the newly created position of vice-president—sales of **W. H. Miner, Inc.** **S. T. Mendez** has been appointed to the newly created position of vice-president—foreign operations, with headquarters at Washington, D. C. Mr. Mendez will handle interests in all foreign countries except Canada.

Joel Hektner, railway engineer, **Timken Roller Bearing Company**, and **A. R. Attebury**, district manager, steel and tube division in New York, have retired. Mr. Attebury will be retained as a sales consultant specializing in Timken pressure tubing.



NYC Tries New Food Service on "Aerotrain"

Passengers riding the New York Central's Chicago-Cleveland "Aerotrain" can get a complete hot meal served at seats in Pyrex dishes. Called "Meal-pack," new service works like this: Dishes are given 1,000-deg heat charge before being filled with hot cooked food. Dishes then are placed in stainless steel multi-dish containers where

self-forming vacuum protects food flavors, aroma and palatability. Aboard train, loaded containers are plugged into electrical circuits to offset temperature losses and food is kept warm even as meal is consumed. Shown here are **J. P. Dowey**, NYC's superintendent of dining services, and **G. C. Harris** of the Mealpack Corp.

Financial

Application

NEW YORK, CHICAGO & ST. LOUIS.—To assume liability for \$4,020,000 of equipment trust certificates to finance 30 1,750-hp. diesel-electric road switching locomotives from the Electro-Motive Division, General Motors Corporation—24 of them at an estimated unit cost of \$165,508, 4 at \$179,214 each, and 2 at \$185,251. Estimated total cost is \$5,061,200. The certificates, dated August 1, would mature in 30 semi-annual installments of \$134,000 each, beginning February 1, 1957. They would be sold by competitive bids which would fix the interest rate.

Authorizations

BALTIMORE & OHIO.—To assume liability for \$4,500,000 of equipment trust certificates, second installment of a proposed \$14,700,000 issue to finance in part purchase of freight cars costing an estimated \$18,467,500 (Railway Age, Jan. 23, p. 47). Dated January 1, they will mature in 15 annual installments of \$300,000 each, beginning January 1, 1957. Division 4 approved their sale at 3 1/4% interest for 99.3304—bid by Halsey, Stuart & Co.—making the annual cost of the securities about 3.38%. They were reoffered to the public at prices yielding from 3.05 to 3.30%, according to maturities.

BOSTON & MAINE.—To assume liability for \$7,230,000 of equipment trust certificates to finance in part purchase of RDC cars and freight cars costing an estimated \$23,151,130, this being first part of a total \$18,510,000 proposed issue (Railway Age, Mar. 3, p. 56). Dated March 1, the securities would mature in 15 annual installments of \$482,000 each, beginning March 1, 1957. Division 4 approved the sale at 4 1/2% interest for 99.16—the bid of Halsey, Stuart & Co.—which will make the annual cost of the proceeds to the road about 4.70%. The securities were reoffered to the public at prices to yield 4.25%.

CHICAGO, ROCK ISLAND & PACIFIC.—To assume liability for \$2,880,000 of equipment trust certificates to finance in part purchase of freight and passenger cars costing an estimated \$3,860,780 (Railway Age, Mar. 12, p. 71). Dated May 1, they will mature in 24 semi-annual installments of \$120,000 each, beginning November 1. Division 4 approved their sale at 3 1/2% interest for 99.31—bid by Halsey, Stuart & Co.—making the annual cost of the securities about 3.51%. They were reoffered to the public at prices to yield 3.375% for all maturities.

Dividends Declared

CHICAGO, ROCK ISLAND & PACIFIC.—common, 67 1/2¢, quarterly, payable September 29 to holders of record September 12.

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.—common, \$3, semiannual; 5% preferred, \$1.25, quarterly; both payable July 31 to holders of record July 21.

DAYTON & MICHIGAN.—common, 87 1/2¢, semiannual; 8% preferred, \$1, quarterly; both payable October 1 to holders of record September 14.

DOVER & ROCKAWAY.—\$3, semiannual, payable October 1 to holders of record September 28.

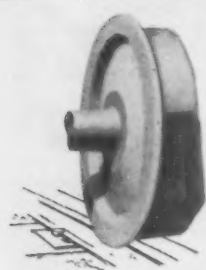
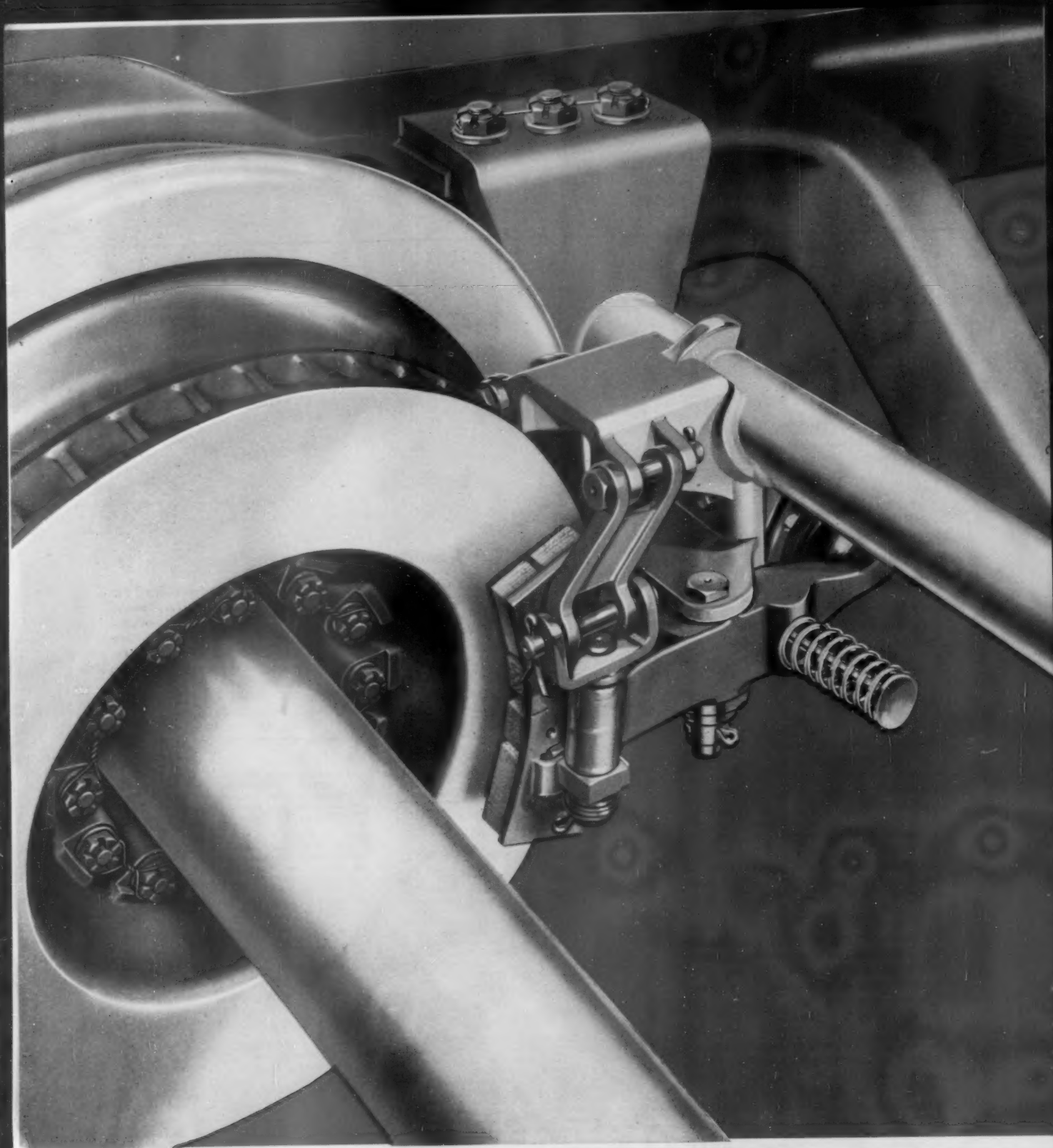
NORTHERN RAILROAD (New Hampshire).—\$1.50, quarterly, payable July 31 to holders of record July 13.

ONTARIO & QUEBEC.—\$3 semiannual (payable in Canadian funds, tax deductible at the source, non-resident tax 15%, resident tax 7%), payable December 1 to holders of record November 1.

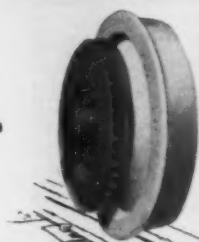
PITTSBURGH, FORT WAYNE & CHICAGO.—common, \$1.75, quarterly; 7% preferred, \$1.75, quarterly; both payable October 1 to holders of record September 10.

ST. LOUIS-SAN FRANCISCO.—50¢, payable September 15 to holders of record September 1.

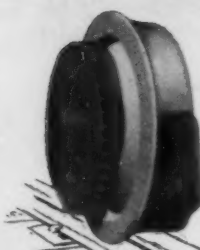
SARATOGA & SCHENECTADY.—\$3, paid July 16 to holders of record July 2.



Clasp...



Rotor...



Combination

Only ASF is equipped to design and develop all three types of brakes

Point by Point...

*check this ASF Brake for safe, economical
stopping power*

Simple design saves money on maintenance

All working parts of the ASF-Simplex Rotor Brake are easily accessible for quick inspection—without removal from the truck. To change shoes, simply remove one pin and lift out head assembly. Shoes are riveted type; replacement is easy without special tools or fixtures. And, *it's virtually impossible to make a mistake when reassembling the head.* Just slip in the simple pin and cotter, and the brake head is locked in place positively and safely.

Full-floating suspension insulates against shock

Note the unique mounting of the entire Simplex Rotor Brake assembly—100% spring suspended. This

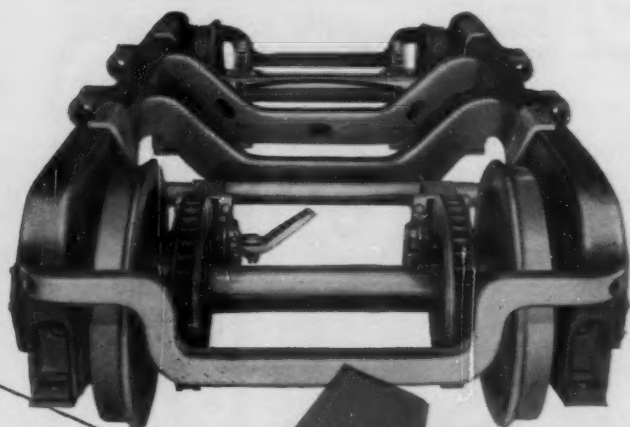
lengthens life of all parts. The spring suspension is not "short-circuited" by attachment to journal boxes. Thus, wheels and axles are easier to remove without interference.

Safe, dependable stopping power...always

Brake shoes are positively guided to make them parallel with rotor; no binding to cause improper action. Power is supplied by rigidly mounted, double-acting cylinders. Shoes have extra thickness...adding many miles of wear between changes. And, these shoes were selected after years of dynamometer testing as the best composition for uniform torque at all speeds and under all weather conditions.

Proved in tests...proved in service

The ASF-Simplex Rotor Brake has been subjected to exhaustive laboratory and field tests—and proved by millions of car miles of service. Nothing has been spared in making this brake live up to the high standards implied by the name "Simplex." Pins are induction-hardened for maximum wear...hardened bushings are ground to close tolerances for smooth operation. And, *the quality of this brake is backed by the prompt service that only a multi-million-dollar plant investment and a multi-million-dollar parts stock can truly produce.*



ASF

AMERICAN STEEL FOUNDRIES

Prudential Plaza, Chicago 1, Illinois

Canadian Sales: International Equipment Co., Ltd.,
Montreal 1, Quebec

Railway Officers

ASSOCIATION OF AMERICAN RAILROADS.—**Franz C. Rummel**, acting district manager, Car Service Division, Atlanta, Ga., appointed district manager to succeed **Thomas M. Healy**, who resigned to accept an appointment to the Railroad Retirement Board.

BURLINGTON.—**R. V. Gilbert**, senior instrumentman, Lines East, appointed division engineer, Galesburg, Ill., succeeding **E. L. Kite**, retired.

Robert J. Fiala, assistant manager merchandise traffic, appointed manager of merchandise traffic at Chicago, to succeed **H. F. Koenig**, retired. **E. E. Crossan**, city freight agent at Chicago, replaces Mr. Fiala.

CHICAGO, AURORA & ELGIN.—**Robert W. Flannigan** appointed tax and real estate agent, in addition to his duties as passenger traffic representative.

DELAWARE & HUDSON.—**Charles H. House**, manager of personnel, and **Howard W. Hooghkerk**, superintendent of police, at Albany, N.Y., retired July 1. **R. W. Hover**, lieutenant, appointed to succeed Mr. Hooghkerk. **E. G. Young**, assistant manager personnel, Albany, succeeds Mr. House as manager of personnel. The position of assistant manager of personnel, formerly held by Mr. Young, has been abolished.

Arthur J. Sheehy, superintendent—special duties, Albany, retired June 30.

DENVER & RIO GRANDE WESTERN.—**P. J. Gamel** and **H. N. Weisenstein** appointed assistant general freight agents, Denver.

NEW YORK CENTRAL.—**G. Howard Ingalls**, freight sales manager, Cleveland, appointed assistant vice-president, freight sales and service, Detroit, succeeding **J. Leo Meehan**, freight traffic manager, retired.

William B. Salter, assistant general manager, Eastern district, Syracuse, appointed manager of transportation at New York. **John C. Kenefick**, superintendent, Toledo, Ohio, succeeds Mr. Salter at Syracuse. **Clifford F. Grimes**, superintendent at St. Thomas, Ont., transferred to Toledo; **William R. Horton**, superintendent at Cleveland, transferred to St. Thomas and **Douglass Campbell**, assistant to president—customer services, New York, becomes superintendent at Cleveland.

L. F. Schrader appointed supervisor of maintenance equipment, Western District, Cleveland, succeeding **C. W. Mitchell**, transferred.

Effective July 1, **A. L. Prentice** was appointed vice-president—purchases & stores, a new title. Effective the same date, **C. D. Longsdorf**,



G. Howard Ingalls



William B. Salter

manager of stores, reports to Mr. Prentice.

R. R. Manion, who has been chief engineer of the Great Northern, has been appointed assistant vice-president—engineering. Mr. Manion will be in charge of engineering, and maintenance of way and structures for the entire system.

NEW HAVEN.—**Charles E. Smith**, retired vice-president, purchases and stores, is leaving for Madrid this month to serve as railway consultant to the Spanish government. He will give special attention to purchasing policies and inventory control.

NIAGARA JUNCTION.—**Norbert J. Fitzgerald** appointed superintendent, Niagara Falls, N. Y., succeeding the late **H. F. Neville**, general superintendent. Mr. Fitzgerald was formerly assistant superintendent, New York Central, at Erie, Pa. The Niagara Junction is owned jointly by the NYC, Lehigh Valley and Erie.

NORFOLK & WESTERN.—**John F. Jamison**, district claim adjuster, appointed assistant general claim agent, Roanoke, Va., succeeding **A. D. Schwarzell**, retired. **Edgar R. Carriaco**, assistant general claim agent, named freight claim agent.

NORTHERN PACIFIC.—**H. E. Bowie**, assistant to the mechanical engineer, named mechanical engineer at St. Paul, succeeding **E. C. Estes**, who retired July 1. **C. C. Bennett**, chief draftsman, mechanical engineer's office, succeeds Mr. Bowie.

C. H. Dunn, in charge of the signal planning section, appointed principal assistant signal engineer. **A. C. Eastman**, assistant signal engineer, St. Paul, named office engineer. **C. L. Steinmetz**, general signal supervisor, Livingston, Mont., appointed assistant signal engineer, lines east of Mandan, N. D.

QUANAH, ACME & PACIFIC.—**James J. Collins** appointed general agent, New York, succeeding **Robert L. Nixon**, retired.

ROCK ISLAND.—**Esther M. Glasper**, office manager, public relations department, appointed public relations representative and associate editor of the company's employee magazine, The Rocket.

TENNESSEE CENTRAL.—**P. W. Sawyer** appointed general agent, Atlanta. Office of general agent, Winston-Salem, discontinued.

TOLEDO, PEORIA & WESTERN.—**Alvin D. Gebhardt**, traveling auditor, named assistant sales manager, Peoria.

UNION PACIFIC.—**Roy C. Cochran**, general foreman, locomotive at the Omaha shops, appointed superintendent of shops at Omaha, succeeding **George L. Wales**, retired.

E. F. Kidder division engineer, Portland, retired June 30.

John D. Glover, traveling freight and passenger agent, appointed general agent, Birmingham, Ala., succeeding the late **J. E. Pilon**.

WABASH.—**John J. Gilbert** appointed attorney at St. Louis, effective August 1. **Howard A. Izard**, assistant to auditor, named tax auditor, succeeding **Walter H. Beste**, retired. **Irvin H. Soldwish** appointed assistant to auditor; **John M. Fricke** named auditor—subsidiaries, and **Carl F. Manthey** appointed assistant tax auditor.

Pierre E. Griffith, superintendent dining cars, appointed superintendent dining and parlor cars, and **Joseph W. Neu**, assistant superintendent dining cars, named assistant superintendent dining and parlor cars, both at St. Louis. Their former positions abolished.

OBITUARY

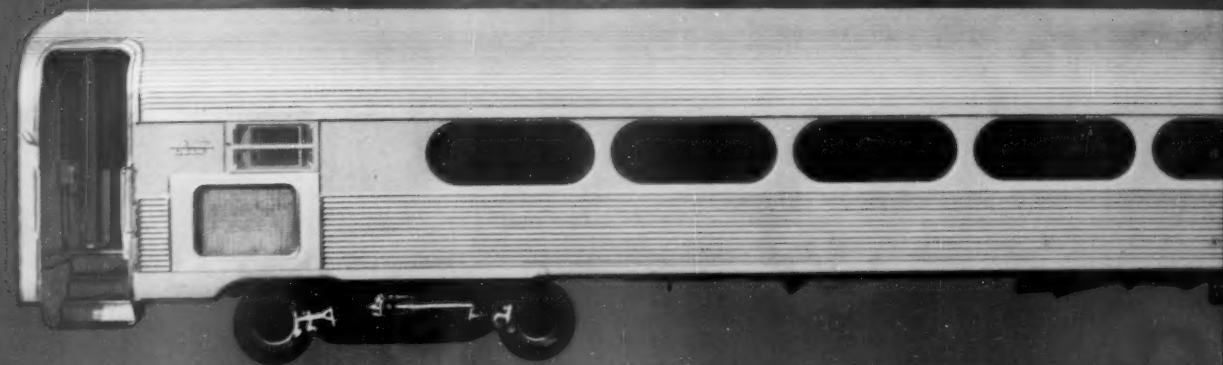
Noble M. Kean, 67, retired assistant general passenger agent of the Chicago & North Western, died July 11.

Presenting

**A NEW CONCEPT
IN LIGHTWEIGHT
PASSENGER CAR
CONSTRUCTION**

***Buick* II**

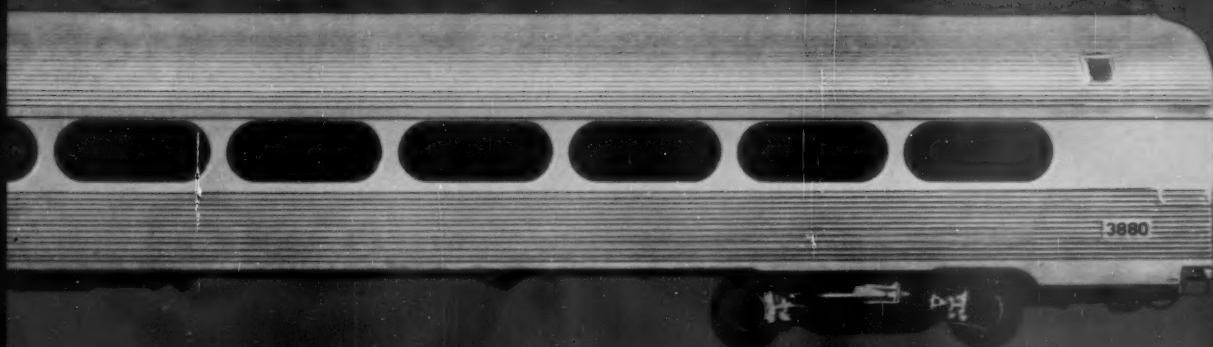
PIONEER III



PIONEER III

<i>Length over coupler face</i>	85'2"
<i>Number of passengers</i>	88
<i>Dry weight of car</i>	52,330#
<i>Weight, ready to run</i>	53,130#
<i>Weight per passenger</i>	595#
<i>Weight per foot of length</i>	615#
<i>Weight per cubic foot of enclosed space</i>	8.17#
<i>Height of coupler</i>	34½"
<i>Height of platform</i>	43¼"
<i>Height of floor</i>	39"
<i>Height over-all</i>	11'6"
<i>Inside width</i>	9'5¼"
<i>Outside width</i>	10'
<i>Truck centers</i>	59'6"
<i>Truck wheel base</i>	8'6"
<i>Curvatures and cross-overs</i>	250' radius & #7 cross-over
<i>Clearance</i>	AAR Standard
<i>Conforms to all AAR strength specifications</i>	
<i>Structure—stainless steel</i>	

WEIGHT COMPARISON		
	Pioneer III	Standard Lightweight Car
<i>Car body structure</i>	26,005	44,250
<i>Equipment and supports</i>	6,115	26,250
<i>Interior trim and app'ts</i>	7,150	14,600
<i>Trucks</i>	13,060	38,100
<i>Weight empty</i>	52,330	123,200
<i>Service Load</i>	800	2,500
<i>Total</i>	53,130	125,700
5-CAR TRAIN		
<i>Locomotive Weight</i>	180,000	335,000 (2250 HP unit)
<i>Train weight</i>	445,650	963,500
<i>Revenue Pass.</i>	440	370
<i>Train weight per pass.</i>	1,000	2,600
<i>HP per ton</i>	5.4	4.7



PIONEER III • Weight, 52,330 lbs.

Objectives

Pioneer III was designed and built to provide a better solution to many passenger carrying problems than any equipment that has so far been developed. The original concept was to develop a basic unit of a train most suitable for commuter service, middle distance runs, or where the high daily mileage necessary to support the operating cost of standard equipment is not possible.

Basic to the concept were these considerations:

1. To be suitable for general use it should have standard AAR tight lock couplers at standard coupling height, and the car must meet full AAR and ICC strength and safety requirements.
2. The greatest structural economy and economy in building a full-length, 85 foot car.
3. For good riding qualities and safety it should have four-wheel trucks.
4. It should take full advantage of the economy, weight saving and reduced first cost made possible by employing head-end power for auxiliary services as long-proved by the Burlington's Zephyrs.

The completed car meets all these requirements.

The car has less than half the weight of a standard car. It is safe. Quiet. Comfortable. Smooth riding. Economical to operate. Easy to maintain —any mechanical part on the car can be replaced in one hour. Its coupler height permits it to be hauled by any standard tractive unit, at great power savings. It can be built for a lower price. And so successfully has the car evolved that we can offer it for any rail passenger service, from MU commuter to transcontinental sleeper.

On the following pages are described many of the measures we took to design and construct this car.



PIONEER III • View of interior structure

PIONEER III • Car body structure

The principal structure of the car body is of welded hi-tensile stainless steel in accordance with Budd standard practice but it combines a great many new features which have become standard practice with Budd's overseas licensees, with a new underframe construction to provide a structure more efficient than any used previously in a railway car body.

A divided center sill is employed—two strong members extending uninterrupted from end to end of the car that are connected directly to the collision posts at the ends. The two center sills are connected by corrugated stainless steel which

stabilizes their flanges and provides a box to house electric train lines. Elsewhere the floor is sheathed by corrugated stainless steel.

In accordance with Budd's standard practice, corrugated stainless steel is used for the local carrying exterior side paneling of the car body. Pier panels are formed of stampings which have the double purpose of inseting rubber window moldings to protect them from car washing machines and decreasing the weight by greatly increasing the stiffness of these pier panels, allowing the use of lighter gage without the use of further reinforcements.

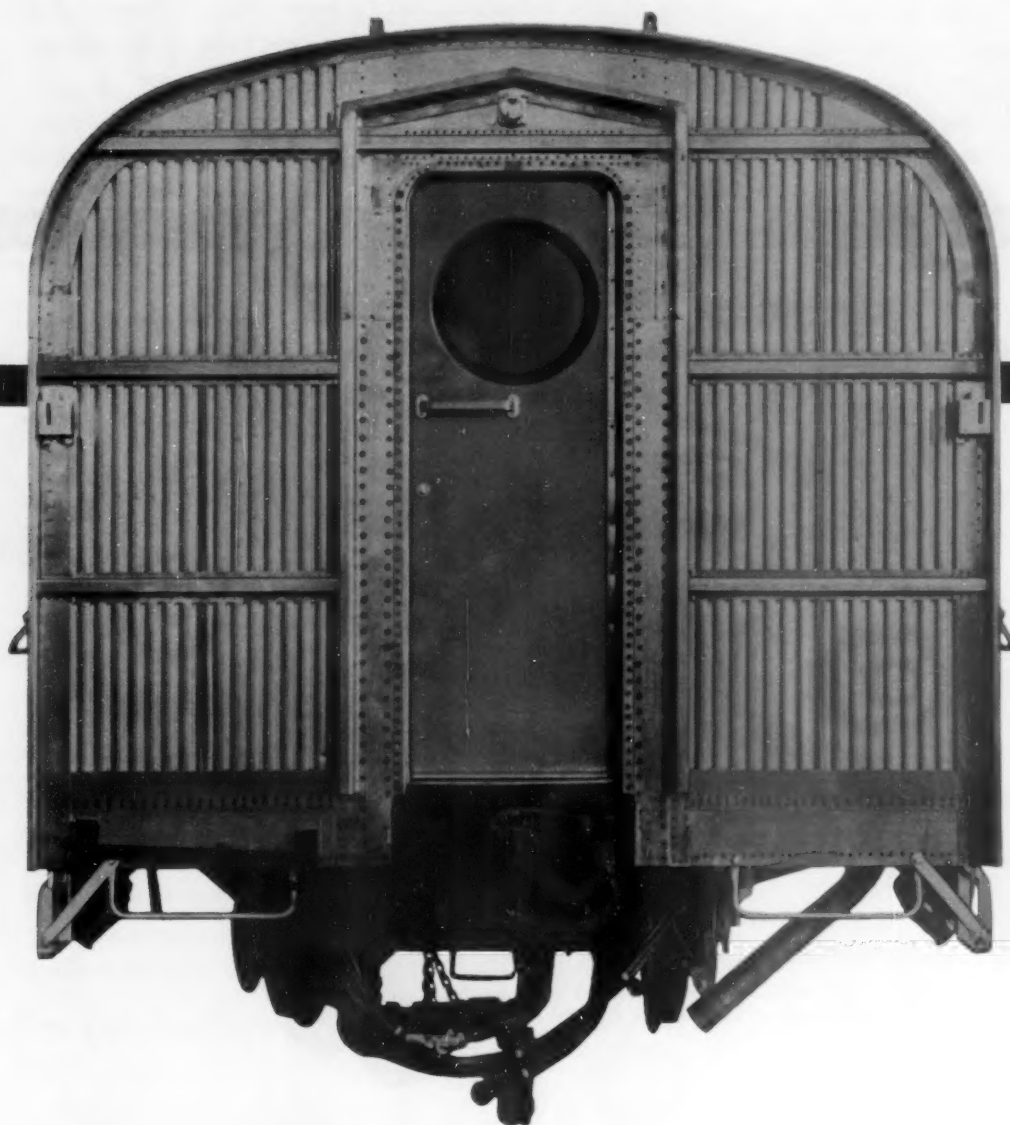
The roof follows normal Budd practice in that corrugations are welded directly to "Z" shaped, formed carlins. Corrugated panels are used for lightness and stiffness at the ends of the cars and at the vestibule partition.

Careful attention has been given to proper sound deadening thruout the car.

Treated fir plywood is used for the floor in accordance with standard practice, but the space

between the plywood floor and the corrugated steel undersurface is filled with isocyanate foam to provide insulation and additional sound deadening. This foam is generated in place during the construction of the car and serves to further support the wood floor and stabilize the floor sheathing.

The structure of the car meets all AAR structural requirements in spite of the weight saving which has been accomplished.

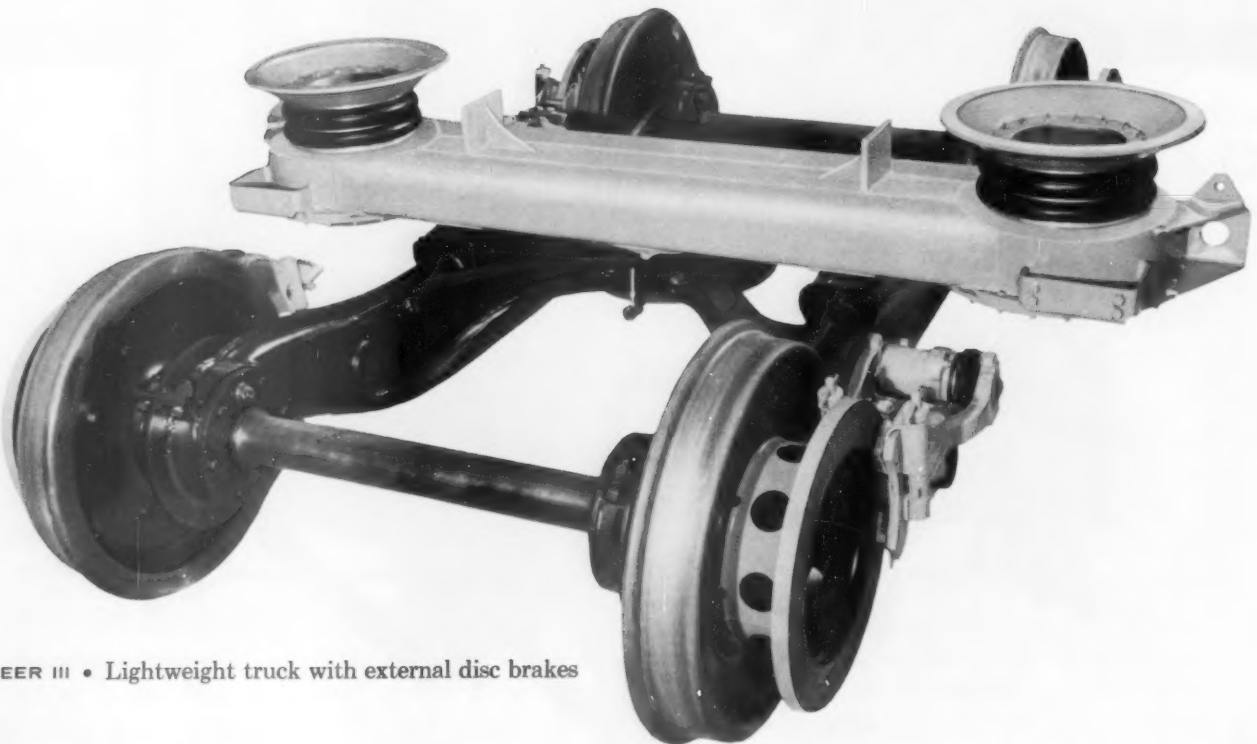


New railway car truck design

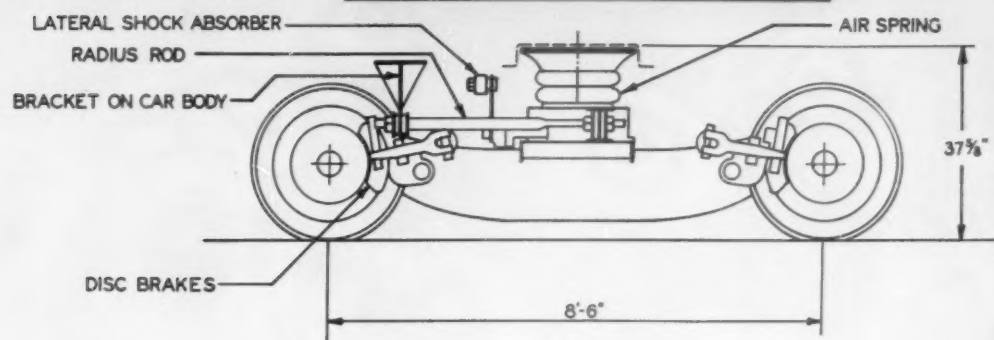
This truck weighs 6320 pounds as compared with the 18,000 pounds of the standard coach truck. As you can see, it differs radically from the conventional.

The goals, for a new truck design, can be classified, in a general way, as those affecting the structure and those which affect its dynamic performance. Structurally, the aim was to design a truck that would be much lighter without any sacrifice of strength; simpler to fabricate; and easier to maintain. Dynamically, this truck was to provide a level, safe and quieter ride under all road conditions and loadings.

By simplifying the mechanical design; by the frequent use of new materials; and by replacing the conventional metal spring suspension with a new type of air suspension, these goals have been accomplished.



PIONEER III • Lightweight truck with external disc brakes



Structure

The principal parts of this truck are side frames, a truck bolster, and two air springs. Eliminated are the equalizer beams, equalizer springs, sliding journal boxes, swing hangers, the spring plank, and transoms.

The air springs work in conjunction with a large reservoir contained in the bolster beam which serves to soften the rate of the air spring. The spring and the reservoir are connected by an orifice to restrict the passage of air between the two. This results in a spring with a variable spring rate and built-in damping which varies according to the frequency and displacements of the air spring.

Because this single spring acts as a stiff undamped spring to cushion the abrupt jars caused by rail joints, and as a soft spring with high damping to smooth out track irregularities, it serves the purpose of the conventional double spring system used in the standard equalized truck. This permitted the development of a greatly simplified truck, with a very considerable saving of weight, that is not dependent on high stresses.

Truck side frames, formed of two stamp-

ings welded together, are allowed to articulate around a central pivot bearing attached to the bolster beam. These side frames carry roller journals mounted in-board of the wheels. The use of inside journal bearings allows a lighter axle, more accessible installation of the disc brake outside the wheel, and easier wheel maintenance.

The air springs are mounted directly on top of the bolster beam to which they are attached. They engage pockets in the car body bolster immediately adjacent to the side wall. Distortion of these air springs provides for all vertical and lateral deflections.

Of great importance in weight reduction is the reduction in bending loads inherent in conventional truck design.

Because the air springs are adjacent to the side frame of the car body, which is the main load carrying member, the car body bolster is not required to carry heavy bending and can be light. Because the truck bolster bears directly on the truck frames instead of through a conventional center plate, it also carries low bending loads and can be made light.



PIONEER III • Interior arranged for 88 seats

PIONEER III • Interior treatment

For some time the Budd Company has been developing the use of laminated fiberglass reinforced plastic for air ducts and for interior panels where the ease with which this strong and light material can be molded to any desired shape has allowed the realization of single piece designs which could only be produced in metal at great expense in tool cost. The saving in pieces largely eliminates the use of supporting structure and the elimination of moldings and joints makes an interior which is easier to keep clean and has a better appearance.

Very full use of reinforced plastic is made in the design of this lightweight car. At each bay in the coach section a single panel extends from the heater guard to include window trim and the lower portion of the baggage rack. A second panel combines the upper surface of the baggage rack, the ceiling and half the air duct. These panels are connected between each window with a single extruded aluminum molding.

The desired color is built into these panels. The hard wearing surface will resist scuffing occurring in normal service for a long time, but should repairs be necessary these can be made to the panels quite easily in place or an entire panel is quickly replaced.

Interior partitions are of micarta faced plywood with a surface which has proven to be exceptionally resistant to wear in service.

In the annexes a single reinforced plastic piece combines the outer wall lining with the hopper and wash basin enclosure, while providing for towel disposal, lights, towel dispenser and the mirror. The hopper itself, again of fiberglass construction, is quickly removable as a unit by removing four screws. This entire assembly is mounted into the car as a unit, pre-piped and prewired.

Piping used, with the exception of that carrying hot water from the electric water heater mounted under the wash basin, is of vinyl plastic, non-corrosive, and with a complete immunity to freezing as it is sufficiently flexible to expand with the formation of ice.

The water tank is located overhead immediately above the lavatories, so that it requires no housing or anti-freeze protection. It is again made of laminated plastic construction for lightness and because of the special shape required. This material is also used in the construction of body and doors, vestibule ceiling panels, exterior door inner panels, step wells, the bat-

tery box, transition air ducts, the enclosure around the air-conditioning and external exterior skirts, and even for the seats.

An interesting application is found at the luggage shelves where box shaped pieces combine the luggage shelves with openings for the wrecking tool case and the fire extinguisher. Because these are molded in one piece, there are no sharp corners to accumulate dirt.

Fixed, semi-bucket type seats with vinyl foam cushioned upholstery which can be quickly removed for cleaning are used. A single molded fiberglass reinforced plastic piece forms the seat proper in such a way that strength is provided by the shape. This unit is mounted on a light seat base consisting of aluminum tubes welded to a cast aluminum wall bracket and seat pedestal. Upholstery is attached by a clip at the top and by concealed straps passing under the seat for quick removal and replacement. A pair of seats complete with base and upholstery weighs 47 pounds.

Equipment

AIR-CONDITIONING Air-conditioning equipment is located in a cabinet to one side of the car at the vestibule end. The compressor and condenser are housed in the lower part of the cabinet, which is lined with molded plastic and separated from the car's interior paneling by isofoam for sound deadening.

The condenser and fan are mounted in an opening in the side of the car and arranged to swing outward for maintenance and can be removed completely for exchange by removing four bolts. This opening gives access to the compressor, a high-speed, sealed Safety Carrier unit which is mounted on a track allowing it to be swung out through the opening for quick exchange.

ELECTRICAL SYSTEM This lightweight coach is intended for operation with either a locomotive fitted with auxiliary power or with a head-end power car which could also serve as a baggage car and which would enable any standard locomotive to be used.

Power for auxiliary equipment is furnished by 440 volt, 60 cycle, 3 phase AC electric train lines connected through jumpers at each car. A control line is included which will open a breaker on the head-end car before jumpers can be separated.

The use of AC power allows the use of high efficiency AC fluorescent lighting; efficient, lightweight, maintenance-free induction motors on blower fans; and, more important, a very lightweight maintenance-free sealed air-conditioning unit.

Eliminated from the car are heavy costly batteries, generators, voltage regulators, and other DC equipment usually found in a conventional railway coach.

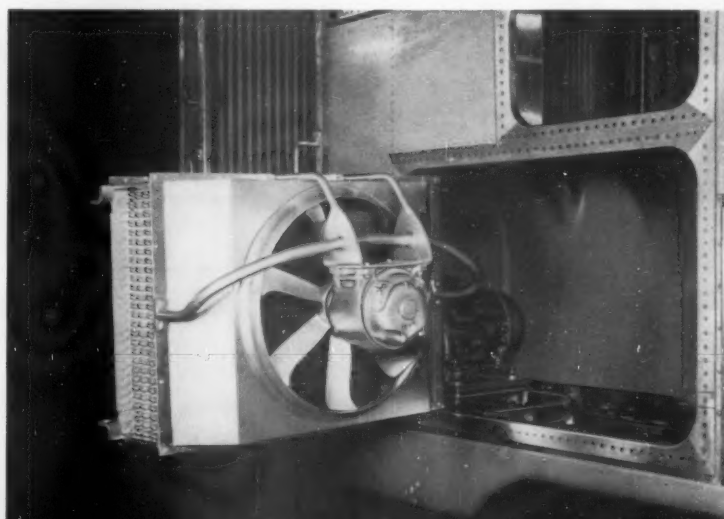


PIONEER III • One-piece moulded plastic annex

HEATING Heat is supplied by steam trainline delivered to side wall radiation in heater ducts, and to a fresh air heating coil forming part of the air-conditioning equipment. Uniform car temperature is maintained by a thermostat using a modified "Unizone" system of control.

AIR BRAKES New York Air Brake Company type LWE electro-pneumatic straight air system is used.

PIONEER III • Air conditioning equipment accessible through car side



PIONEER III • Adaptability

The basic car can be adapted to any railway passenger service—mainline coach, dining car, multiple-unit commuter, sleeper, all meeting AAR strength requirements.

The M.U. commuter coach is based on self-contained propulsion equipment designed to operate on 600 volts DC and having four truck-mounted motors.

The mainline adaptations, including high capacity and 52-passenger coaches, diner, bar-lounge and sleeping cars, are based on self-contained auxiliary power including an axle-driven motor generator and large capacity battery. Otherwise their design is characterized by Pioneer III features, including molded reinforced fiberglass and melamine interior wall and ceiling surfaces and lightweight, air-sprung trucks. The seats in the mainline coach will be rotating and reclining.

All car types are available with a choice of air brake equipment, and can be equipped with Budd Rolokron anti-wheel slide device if required.

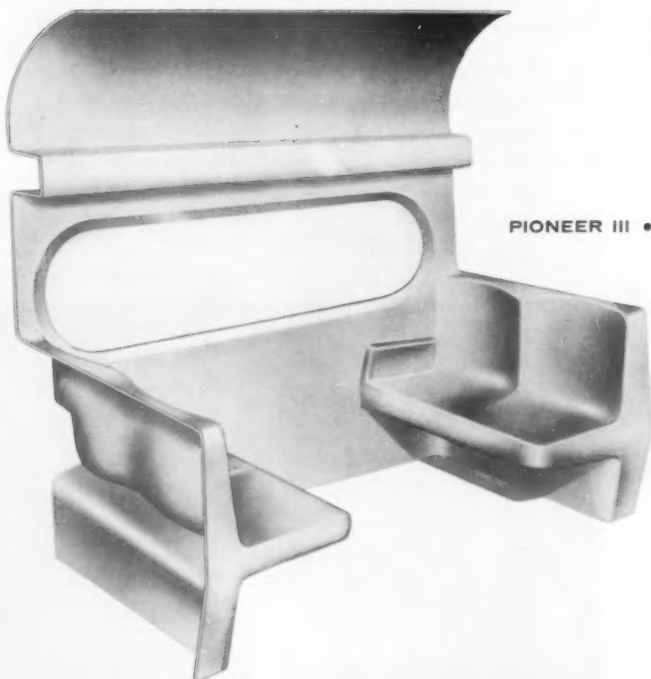
The diner arrangement proposes a special design for high revenue and low operating costs. High capacity is obtained by using an aircraft type galley designed to serve a choice of 3 different menus. Frozen, pre-cooked dinners prepared at central stations, stored in refrigerators are re-constituted in special supercharged warming ovens designed for the purpose. The advantages of this arrangement over that used in a standard dining car are:

1. *Reduction in kitchen and crew size*
2. *Acceleration of service*
3. *Use of car as bar car outside of specific meal hours due to elimination of food preparation time*
4. *Reduction in kitchen equipment maintenance*

The sleeper floor plan provides maximum capacity for a low cross section design.

Estimated lightweight of these car types are as follows:

M.U. Commuter coach	79,000 pounds
High capacity mainline coach	61,000 pounds
52 passenger mainline coach	62,000 pounds
High capacity diner	71,500 pounds
Bar-lounge	69,000 pounds
Sleeper	79,000 pounds

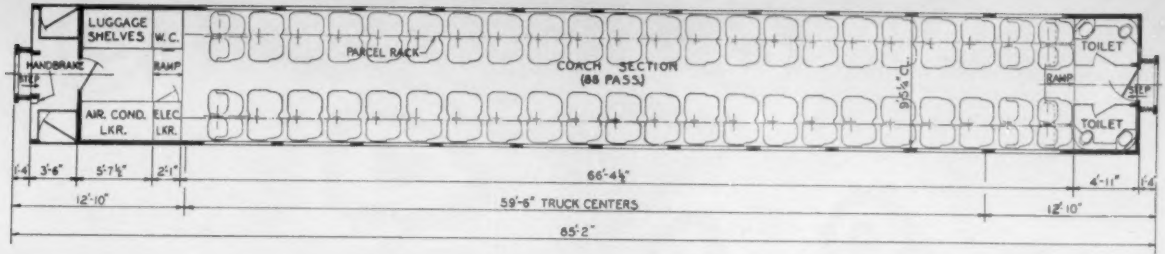


PIONEER III • Dining car moulded plastic seat—sidewall ceiling unit

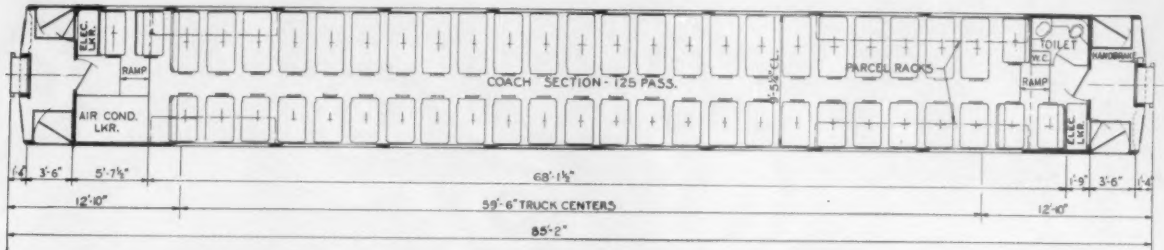
Budd

THE BUDD COMPANY, Philadelphia 15, Pa.

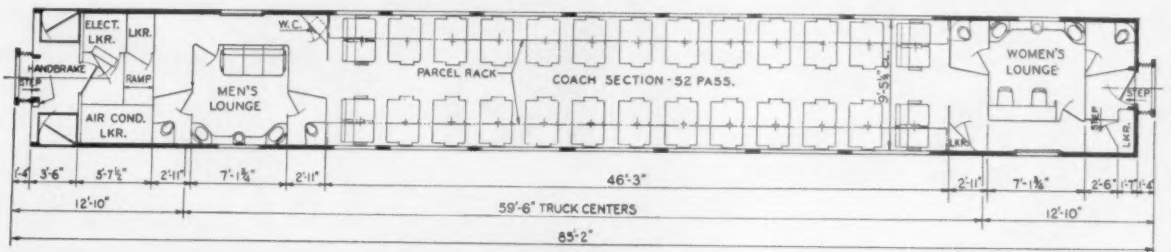
**HIGH CAPACITY
MAINLINE COACH**



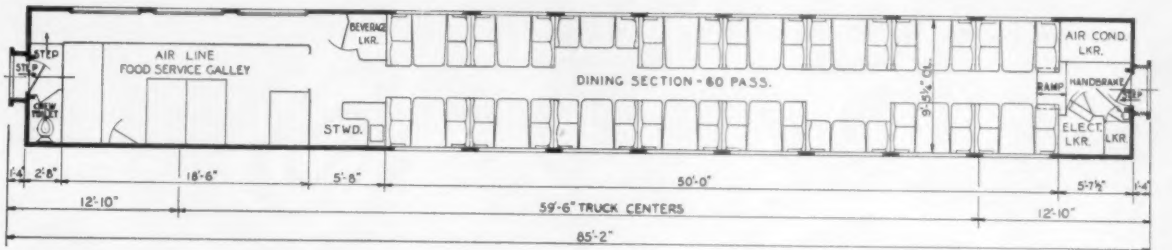
**M.U. COMMUTER
COACH**



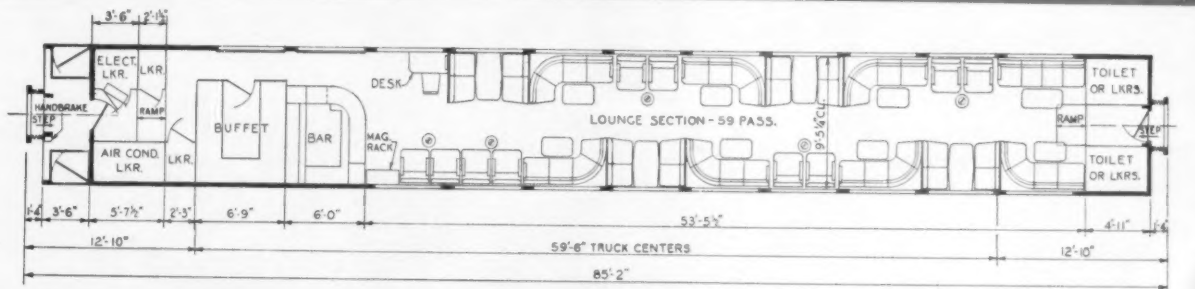
**52 PASS.
MAINLINE COACH**



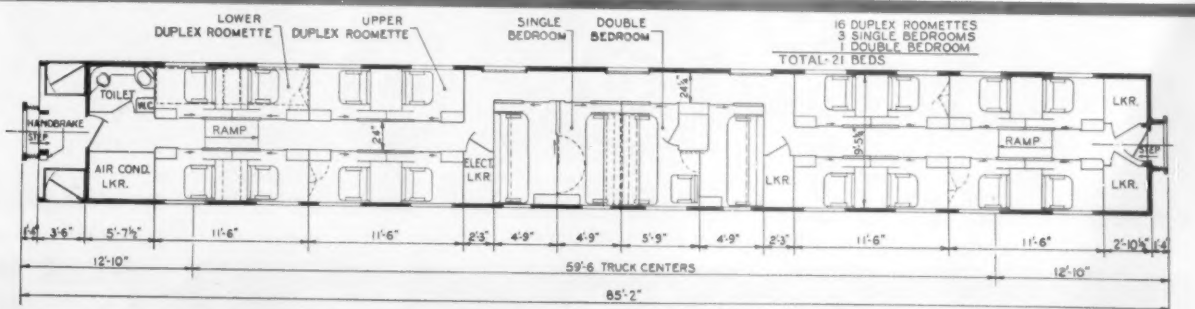
**HIGH CAPACITY
DINER**



**TAVERN-LOUNGE
CAR**



SLEEPER





D II
Ducati **PIONEER III**





New luxury coaches, such as this gleaming stainless steel car, have been added to popular trains on the Missouri-Kansas-Texas and the St. Louis-San Francisco Railroads. The cars are constructed of chromium-nickel stainless framing members in sides, ends and roof. They employ stainless steel

for outer sheathing, supporting channels, roof hoods, safety appliances, side and end sills, buffer wings, sub-floor sheets and stringers. The interiors, including galleys, use stainless widely, for durability, beauty and hygienic cleanliness. The builder: Pullman-Standard Car Mfg. Co., Chicago 3, Ill.

Key to "luxury" coach economy is strong, enduring stainless steel

Cars of this type, made entirely of chromium-nickel stainless steel except for the center sill, cross-bearers, bolsters and floor beams, hold down operating and maintenance costs.

High strength . . . light weight

The high strength-weight ratio of chromium-nickel stainless permits use of light gauges without sacrificing strength or safety. As a result, designers can trim off substantial amounts of deadweight.

Defeats corrosion

Corrosion - resisting all the way through, the chromium-nickel alloy steel retains its original section thickness indefinitely. There's no need for paint or protective coatings to help it resist corrosive attacks. Easy to clean and keep clean, stainless steel stays attractive in appearance year after year.

Answers many demands

Today, hardly a passenger car is

built that does not take advantage of the utility and economy of chromium-nickel stainless steel. This material provides superior properties for structural members and sheathing, as well as for interiors.

An illustrated copy of "Nickel Alloys in Railroad Equipment," is yours for the asking. Send for this 32-page booklet that shows the wide use of nickel alloy steels and other alloys of nickel in rolling stock, motive power and even in track work. Write for it now.



THE INTERNATIONAL NICKEL COMPANY, INC. 67 Wall Street
New York 5, N. Y.

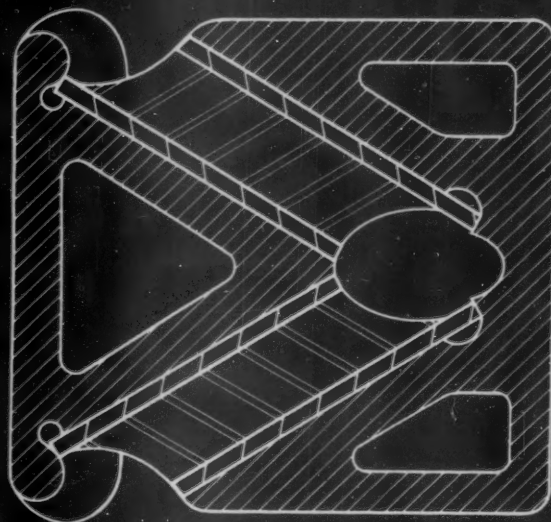
*Better Railroading with
National Specialties*



REASON:

Over 9 out of 10 diesel road locomotives are equipped with National Rubber-Cushioned Draft Gears. Since 1937, over 40,000 National rubber gears have given more than 200 billion miles of service. No other manufacturer can match this experience.

AA-3578



SHEAR-COMPRESSION PRINCIPLE

Ask any National representative what National's continued progress through research means to you.

NATIONAL MALLEABLE AND STEEL CASTINGS COMPANY

Cleveland 6, Ohio

COUPLERS • YOKES • DRAFT GEARS • FREIGHT TRUCKS • SNUBBER PACKAGES • JOURNAL BOXES and LIDS



This is the seventh in a series of advertisements about the people of Standard.

SERVICEMAN, SALESMAN and low handicap golfer

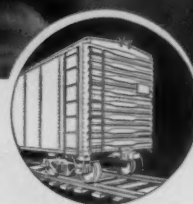
Here's Tom Milligan.

He enjoys hunting and fishing—and likes to talk about them. His brand of golf speaks for itself.

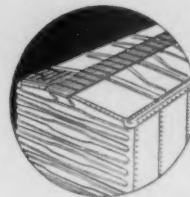
But Tom's real mission in life is service. He represents Standard to the railroads of the northwest. To make sure these roads get the kind of service that has made so many friends for Standard, Tom literally commutes between

Chicago and the Twin Cities. In either place it's his job to see that your order gets quick, complete attention.

Throughout the Standard organization *personal* attention to your needs comes first. Whether your order is for one car or a hundred—for new car parts or for replacement on existing equipment—you can depend on Standard to get cars back on the road, paying their way.



Improved Dreadnaught Ends



Diagonal Panel Roofs

9 out of 10 house cars now in operation on America's railroads are equipped with Standard Ends and Roofs.



Standard RAILWAY EQUIPMENT MANUFACTURING COMPANY

General Office: 4527 Columbia Ave., Hammond, Ind. • New York • Chicago • St. Paul • San Francisco
Standard Railway Equipment Manufacturing Company, (Canada) Ltd. Sun Life Building, Montreal



Safety of operation has always been one of the prime considerations of The Denver & Rio Grande Western Railroad. Through a continuing modernization program, including the replacement of obsolete equipment and worn track, the road has been able to achieve high standards of safety. One of the greatest contributions toward this effort has been the Sperry Rail Service... used to test rail since 1936.



Promotes Track Safety with SPERRY RAIL SERVICE



About 22 track miles of 115- and 119-pound rail were laid in 1955, part of the continuing Rio Grande track maintenance program. Track is tested every three to six months, depending on density and class of traffic, age and condition of rail. With this frequency of testing, the size of defects is kept to a minimum.



Eighteen diesel-electric motive units were added last year as part of the railroad's continuous modernization program. The freight car fleet was sizably increased by the construction of 100 new double-deck stock cars. To compensate for heavier traffic conditions and to avoid delays, rail-testing schedules are carefully planned to coordinate Rio Grande forces with SRS crews.

Improvements planned for 1956 will include practically complete dieselization of standard gauge operations... also the addition of 100 new box cars, 100 new flat cars and 25 70-ton all-steel covered hoppers. In the maintenance-of-way department, part of the new rail program will be the laying of 45 miles of rail in replacement sections.



Continuous research and development enable Sperry Rail Service to meet the strict rail-testing requirements of modern railroads. This exclusive advantage provides positive assurance that Sperry inspection methods and equipment are the most advanced. For information on testing rail in track, diesel axles, wheels or other vital components, write or phone for latest procedures.



SPERRY RAIL SERVICE

Division of Sperry Products, Inc.
Danbury, Conn.

New York Chicago St. Louis

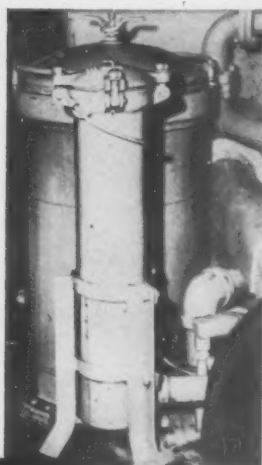
FIRST IN RAIL TESTING



Keeps Diesel Interiors "Clean-as-a-Whistle" with Oakite Composition No. 72



BEFORE Photo shows diesel filter units before spray-cleaned with Oakite 72.



AFTER Same units showing efficiency of Oakite spray-cleaning and rinsing.

Sticklers for absolute cleanliness, FRISCO keeps its diesel engine rooms spotless. They know that cleanliness contributes importantly to mechanical operating efficiency and safety.

FRISCO uses Oakite Composition No. 72 for this important maintenance operation because...

Oakite Composition No. 72 is

- SAFE** It's water-mixed... safe for personnel and paint
- SPEEDY** Superior wetting action speeds soil penetration and removal
- ODORLESS** Pleasant to use even in confined cab areas
- VERSATILE** Use it for washing diesel interiors, exteriors, coaches, headlinings, sidelinings.
- SAVES** storage space, reduces inventory
- ECONOMICAL** Water-mixed solutions cost just pennies per gallon

And, in addition to Oakite 72, FRISCO uses Oakite 19 for parts cleaning; Oakite 61 for filter conditioning; Oakite 20 for steam cleaning diesel engine bases; Oakite 88 for mechanical coach washing.

For complete story on money-saving Oakite Cleaning send for FREE Booklet "How to make sure of the best in Railroad Cleaning." Oakite Products, Inc., 46 Rector Street, New York 6, New York.



OAKITE

RAILWAY DIVISION



Superbanites

48 New Double Deck Commuter Coaches are

WAUKESHA

equipped



Every car is self-sufficient—Waukesha engine-driven equipment supplies air conditioning and all electric needs

• Chicago suburbanites, riding in C & NW Superbanites—the 48 new air conditioned double-deck coaches—will enjoy the latest and finest in commuter comfort and service.

Northwestern has 16 of these coaches now in service; 16 ready to put in service; 16 to be delivered—a total investment of almost \$7-million. With 7,856 seats these 48 cars equal the capacity of 100 of the road's conventional suburban coaches.

Each car is self-sufficient—with two Waukesha

propane engine-driven Ice Engines furnishing the air conditioning; and one Waukesha propane engine-driven 9 KW Enginotor supplying all electrical requirements.

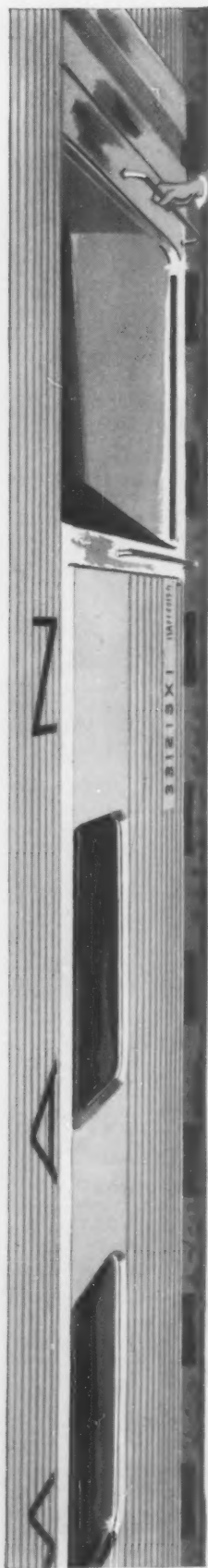
C & NW first used Waukesha railway equipment in 1935. Since then over 40 railroads and the Pullman Co. have become users of Waukesha Railway Propane Air Conditioning Units; and Railway Enginotors, Propane and Diesel. Send for descriptive bulletins.



RAILWAY DIVISION

318

WAUKESHA MOTOR COMPANY • WAUKESHA, WIS.



LET'S PUT AMERICA'S MOTORISTS ON THE RIGHT TRACK

Americans travel more than 500 billion passenger miles every year—in their cars. Why? Simply because they want a car at their destination. And that kind of mileage makes the highways your biggest and toughest competitors.

You can help win highway travelers back to rail travel now with the Hertz Rail-Auto Travel Plan. This Hertz-pioneered plan offers motorists real travel convenience: swift, comfortable trains plus a new Powerglide Chevrolet Bel Air or other fine car to drive as their own when they arrive.

Promote it. Urge *all* your ticket agents to ask this simple question every time they sell a ticket: "May I reserve a Hertz car for you at your destination?" Once passengers try the Hertz plan, they'll use it again and again. That will mean repeat rail business for you!

It's convenient and low in cost. Alert railroad management already is using it to win new and profitable customers. And, as a personal bonus-incentive to ticket agents, Hertz pays them *10% commission* on the total rental charges. *Plus*, Hertz has installed personal service counters or direct "Call a Car" phones in terminals on concession (and many more are coming).

You'll get lots of help from Hertz. You'll have free displays, signs and literature. You can capitalize on Hertz' tremendous national promotion of rail-auto travel in your own advertising. Remember, Hertz is the world's largest car rental service, with offices in over 700 cities worldwide.

If you are interested, and would like to know more, call or write Hertz for facts, forms and promotional materials. The address: Hertz Rent a Car, 218 S. Wabash Ave., Chicago 4, Ill.

More people by far...use

HERTZ

Rent a car



Utilities More Adept At "PR" Than Railroads?

Is the electric power industry more skillful (or maybe more lucky) in arousing public opposition to further socialistic inroads into their business than the railroads have been in recruiting opponents to socialization of transportation? The evidence indicates a sad "yes" as the only possible answer to that question.

Ask practically any literate citizen if he is aware of unfair competition of the government with the electric power industry—and you will usually get a correct answer. Most informed people know about TVA and other such-like projects—and how they stack the cards against the taxpaying, customer-supported, private utilities. But hardly any of these self-same citizens know that transportation is much further down the road toward socialization than the electric power business is.

There is in this country a considerable body of articulate defenders of private enterprise—any one of whom, at the drop of a hat, can make you a speech on the iniquities of public housing or public ownership of electric power. But try to get any of these able defenders of capitalism to tell you about the socialization of transportation—and you'll usually draw a blank.

There are, we suspect, two primary reasons why professed anti-socialists see socialized electricity through a telescope, while they can't even detect transportation socialism with a microscope. One reason is that the utility people do not attack public power merely as "unfair" to them. Instead, they definitely identify it as socialism (which it is, and which is a way of doing business that most people don't like, if they are brought to recognize it). Moreover, the utilities show how such socialism harms the average citizen and taxpayer; and they carry on their educational campaigns against socialized power continuously—not merely at times when specific legislation happens to be coming up for a vote in Congress.

Don't Rap Users

Another course which, in all likelihood, has been most helpful to the utilities in gaining acceptance of their educational program is that *they level their attack at the government policies they oppose, and not at the users of below-cost government-produced power.*

Railroad people, on the other hand, have often had their aim diverted from the center of the socialistic mis-

chief—which is government policy in the financing of waterways and highways—and have, instead, directed a lot of their fire at the beneficiaries of tax-supported transportation facilities. It isn't the recipients of government hand-outs who are the real scalawags—but the pressure groups and the politicians who provide the hand-outs. You see a lot of utility advertising and other propaganda against socialized power—but hardly ever any criticism of the industries and home-owners who take advantage of government largesse to purchase electricity at less than cost.

The result of a couple of decades of such relentless educational effort by the utilities and their friends is that nobody today in literate circles can get away with playing the dual role of friendship both for free enterprise and the TVA thing. By paradoxical contrast, there are plenty of people who are still successful in identifying themselves as "conservatives" and "free enterprisers"—while they are also protagonists of a far deeper surrender to socialism in transportation than that which TVA and other kindred projects represent in electric power.

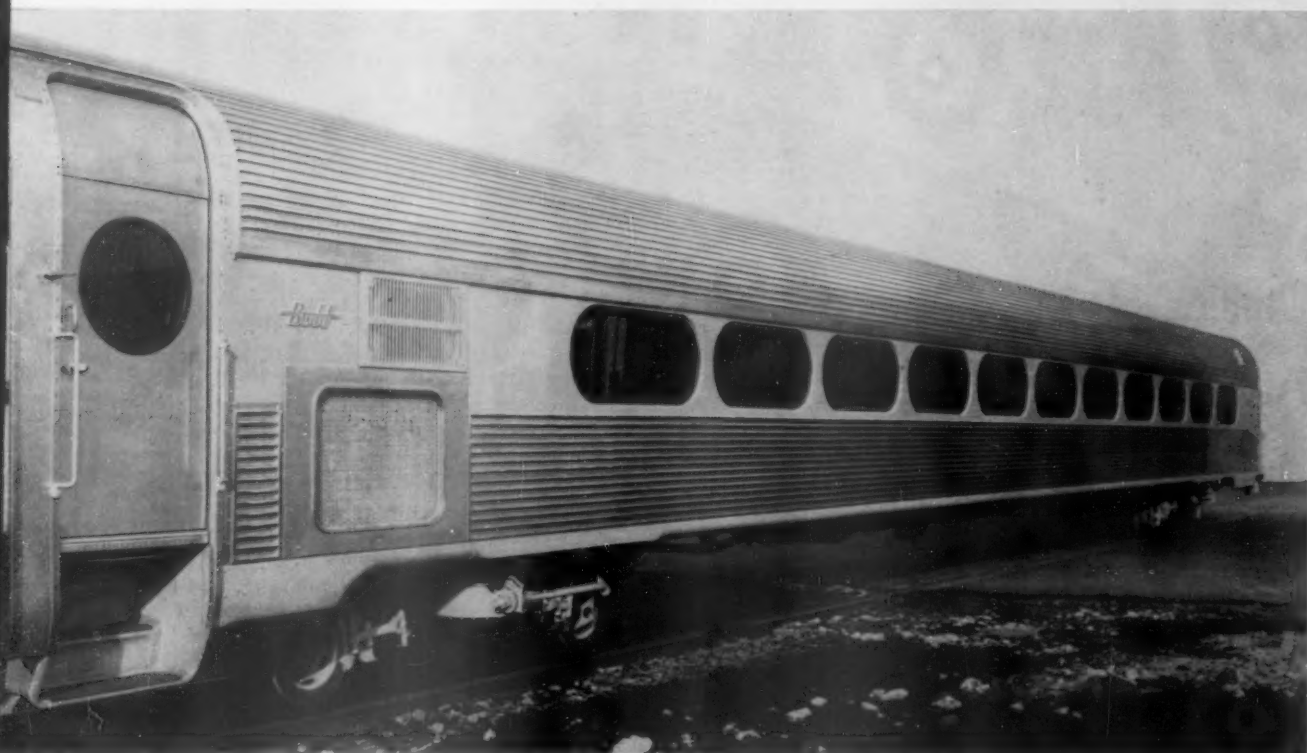
Short vs. Long Range

It is both expedient and sound in principle that the railroads should limit their immediate legislative objectives to one or two specific issues, e.g., the right to make competitive rates. But it is mighty hard to find any reason whatever why long-range programs of public education should be similarly limited in their scope. Indeed, public discussion of transportation issues which is restricted to technical questions in the field of regulation likely to impress the average layman as picayune.

Experience indicates that nobody much cares much whether the railroads' rivals get subsidies or not. People can't easily see how such subsidies hurt *them*. But there are very few people who, if confronted with the complete picture of how transportation is being socialized, would fail to see their selfish interest in opposing it.

The utilities have not, of course, won their campaign yet. But they are a long way ahead of the railroads because, at least, most intelligent people have absorbed the essential facts of the situation. They now identify the position of the utilities with anti-socialism. But how many people similarly identify the position of the railroads on transportation issues with anti-socialism in transportation?

Don't let anybody suppose that the foregoing is written in disparagement of the Association of American Railroads—or any other group of spokesmen for the railroad industry. We are all in this fight together. None of us has aimed high enough or far enough or used sufficiently high-powered ammunition—in a continuing program. In the name of enlightened self-interest—as well as in that of patriotic foresight—let's not keep on playing penny-ante forever. We can learn something from the experience of the electric utility people.



WEIGHT-per-passenger of 595-lb was achieved in this 85-ft coach with use of special trucks, new structural arrangements, and utilization of new car building materials.

STANDARD LENGTH, 595-LB PER PASSENGER IN . . .

Budd's Bid for Lightweight Market

"Pioneer III" has new lightweight trucks, spring system, structure and finish which cut weights and costs, but not riding qualities and safety.

Designed for lower mileage services in which profits are not possible because of the operating and fixed costs of present-day standard equipment, the new Budd lightweight coach weighs 595 lb per passenger seat.

The development was carried on to provide an economical passenger car for commuting and medium distance services. However, the design has been adapted to the car arrangements necessary for long-distance runs. This new Budd "Pioneer" is now being offered as a solution for problems throughout the passenger traffic field.

"Pioneer I" and airplanes were Budd's first ventures in the structural use of stainless steel. "Pioneer II" is the "Pioneer Zephyr," still in service on the Burlington after 22 years. "Pioneer III" was developed to be suitable for general use without a wholesale revolution in railroad operating practices. It has AAR tight-lock couplers at standard coupling height. It also complies with AAR and ICC strength and safety requirements. The Budd position is that the 85-ft car permits the greatest economies in structural materials and construction costs. Shorter bodies, according to Budd, introduce

a weight penalty because of the larger number of car ends.

For riding qualities and safety, this builder has retained the four-wheel truck, although its design has been radically changed and its weight reduced to 6,300 lb. The head end electrical power, which Budd first used on the early Burlington Zephyrs and which has recently been accepted by more and more railroads, was utilized to reduce weight, first cost and operating expenses.

The comparison between a conventional Budd lightweight 74-passenger coach and the new "Pioneer"

coach seating 88 shows a weight saving of 70,330 lb. Tabulation of the components produces this comparison:

	"Pioneer"	Conventional
Car body structure	26,005 lb	44,250 lb
Equipment and supports	6,115 "	26,260 "
Interior trim and appointments	7,150 "	14,610 "
Trucks	13,060 "	38,100 "
Weight empty	52,330 "	123,200 "
Service load	800 "	2,500 "
Weight per passenger ..	595 "	1,858 "

The finished car is not a completely independent unit because of the need for head-end power and because of the "LWE" brake equipment. However, few of the recently built railroad passenger train designs have been governed by requirements of complete interchangeability.

Budd envisions "Pioneer III" as a basic car which can be adapted to a complete line of car types for main-line use. These, with their estimated weights, are:

	Lb.
88-passenger interchange coach	61,000
52-passenger coach	62,000
MU car	79,000
Diner	71,500
Bar lounge	69,000
Sleeper	79,000

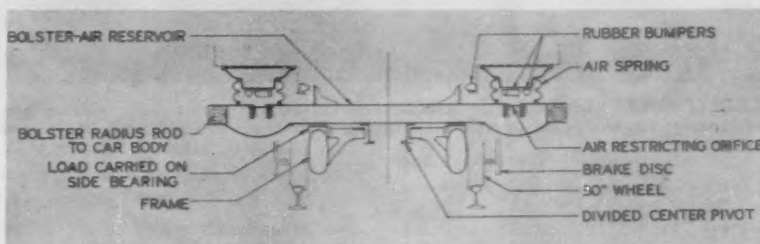
Truck Completely New

In designing the new truck, the structural goals were to be low weight without sacrifice of strength, or simplicity of fabrication, and to increase ease of maintenance. Dynamically, Budd's aim was to provide a level, safe and quiet ride under all road conditions and loadings. The mechanical design, frequent use of new materials, and utilization of air spring suspension have been the Budd methods of achieving these aims.

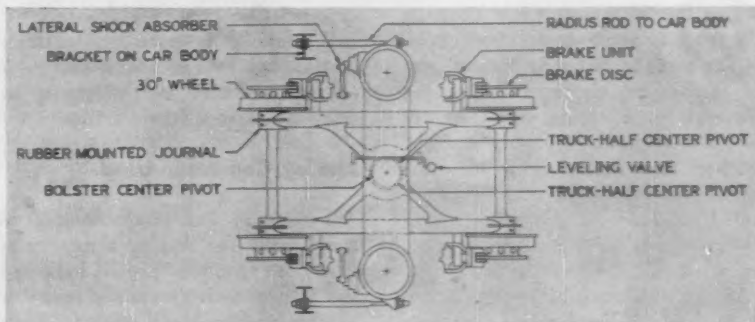
The low truck weight was achieved by making the load paths from the carbody to the wheels as direct as possible to reduce bending moments. The principal parts are two side frames, a truck bolster and two Firestone air springs. Such parts as the equalizer beams and swing hangers are eliminated. Body loads are transmitted by the air springs directly to the truck bolster at a point near the side sills. This makes pos-



TRUCK substitutes single air spring on each side for conventional double spring arrangement. Car has tubular axles and outside-mounted disc brakes.



DIAGRAMMATIC section shows the relationship of the air springs to the bolster which serves as an air reservoir for the springs. The restricting orifice is clearly shown.



PLAN VIEW of truck, the principal parts of which are two side frames, a bolster and two Firestone air springs. There are no equalizer beams or swing hangers.

sible an extremely light car body bolster.

Vertical loads then go from the truck bolster to the side frames through side bearings with non-metallic bearing surfaces. The truck side frame then carries the load directly into the inboard journal bearings. With these inboard bearings, a shorter, lighter axle has been used. The car has 30-in. diameter wrought steel wheels.

The grease-lubricated Timken roller bearings have their inner races mounted on the tubular axle and the

outer races carried in rubber bushings clamped in split rings, which are the ends of the side frames. Rubber mounting is to insure uniform bearing loading, and the serrated split arrangement makes it possible to change wheel sets. The side frames are hollow beams of deep, oval cross section assembled from two stampings welded together.

Integral with each side frame is a triangular structure terminating in a half bearing at the central pivot attached to the bolster beam. This allows independent vertical motion



LIGHTING LEVEL and bright interiors should attract passengers, maintenance economies are to appeal to railroads. Lining from floor to air duct is two pieces of plastic.

of the two side frames to allow the truck to negotiate vertical irregularities in the rail. The truck is maintained in tram by the central pivot which prevents longitudinal displacement of the side frames and resists lateral thrusts while allowing the truck to rotate under the bolster.

The bolster beam is hollow and is used as an air reservoir for the air springs. Rotation of the bolster is prevented by rubber-mounted anchor bars extending to the side sills. These links also transmit braking forces into the car body. Both lateral and vertical bolster movement is possible, but lateral is finally limited by rubber-cushioned bumpers. A new Budd disc brake is mounted outboard of the wheel, and both the disc and the operating mechanism can be readily removed.

Metallic wearing surfaces in the truck are completely eliminated and moving parts are isolated by rubber bushings, brake lining material, and wear-resistant plastics. These innovations, along with the arrangement of parts, are intended to simplify maintenance and reduce costs. In combination with the air springs, the non-metallic mountings isolate the body from external vibration and noise.

The air springs work in conjunction with the reservoir formed by the hollow bolster beam to produce a unique dynamic system. At the bot-

tom of each air spring is an orifice which opens into the hollow bolster. Produced is a spring with a variable spring rate and built-in damping that varies according to the frequency and displacement of the air springs. The single spring acts as a stiff undamped spring to cushion jars caused by rail joints and as a soft spring with high damping to smooth out track irregularities.

Analog Computer Used

The result was produced after a study using the Analog computer at Franklin Institute which indicated the proper spring volume, reservoir volume and orifice diameter. Tests have shown that the result produces a ride superior to the standard equalized truck with the conventional double spring system such as used under the Budd RDC cars. Because the two air springs are connected through the bolster reservoir, there is considerably less resistance to side lean than in the conventional truck. However, the lower weight of the car, and the smaller moment arm through which this weight acts on the truck, have yielded a car in which lean is less than that of conventional coaches on the same curves.

The same ride is provided under all loadings by holding the static height of the car constant with a leveling valve attached to the center

of the bolster and to the body. Changes of air pressure in the spring system are made only with changes in static load because the valve acts only if the center of the normal vertical oscillation changes. This same leveling system is utilized to adjust the cylinder pressure in the brake system and make braking force proportional to car weight. Lateral oscillation is damped with two specially designed Houdaille shock absorbers, and truck shimmy is damped out by friction introduced at the side bearing.

New Body Design

The body is a welded, high-tensile, stainless-steel structure combining standard Budd practices with some used by their European licensees and with a new underframe construction. A divided center sill composed of two stainless Z-shaped members is connected directly to the collision posts at the ends. A lightweight welded alloy draft gear pocket braces the end of the car, carries the draft gear and coupler, and reinforces the joints between the center sills and the collision posts. The widely spaced center sills give direct support to the seat pedestals.

The two center sills are connected by corrugated stainless steel which stabilizes their flanges and gives a housing for the electrical lines under the car. The floor sheathing is corrugated stainless steel. Cross bearers support the center sills vertically, and the construction at the light body bolster provides the pockets into which the air springs fit.

Corrugated stainless steel is used for the load-carrying exterior side paneling of the body. The nodes are polished for appearance. The corrugations are directly welded to vertical posts at each pier panel and to intermediate stub posts providing extra stiffness. Stamped pier panels combine stiffness and light weight without further reinforcement, and serve to inset the rubber window mountings.

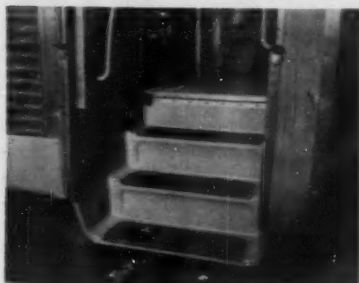
The pier panels are connected to the roof at a joint which provides a strong rail to resist sideswiping loads. The structure is simplified by the absence of a letter board. The corrugated roof is welded directly to Z-shaped carlines.

One-piece, round-cornered frames are used at the side doorways and at

the air conditioning equipment openings to reinforce the structure, which would otherwise be weakened because the car's low profile causes the openings to occupy an unusual portion of the car height. The body and truck designs allow a floor height of 39 in. and a platform height of 43 $\frac{1}{4}$ in. This platform is one step lower than the standard, and a ramp inside at each end of the car brings the passenger down to the coach section floor level. The low platform is possible because a specially shaped diaphragm plate is supported and pivoted directly on the coupler. This allows not only two cars of this design to operate together, but permits the car to be coupled with standard equipment.

The space above the corrugated floor sheathing and below the plywood floor is filled with isocyanate foam generated in place. This supports both floor and sheathing, and provides insulation and sound deadening. End step wells are each single-piece molded plastic units which incorporate light weight, high strength and integral color.

These external components and most of the interior finish of the new "Pioneer" are made of laminated, fiberglass-reinforced plastic which has been under development by Budd for some time. This strong, lightweight material can be molded to any desired shape, allowing one-piece designs eliminating supporting structure and joints while giving an easily cleaned, better appearing surface. Each bay (single window span) in the coach section is lined with one panel extending from the heater guard to the nose edge of the luggage rack—including the window trim and lower baggage rack surface. A second panel combines the



REINFORCED PLASTIC exterior components include steps, car skirts and battery boxes. Extensive use was made of same material for interior lining of the car.

"PIONEER" DIMENSIONS

Length over coupler face (ft-in.)	85-2
Height of coupler (in.)	34 $\frac{1}{2}$
Height of platform (in.)	43 $\frac{1}{4}$
Height of floor (in.)	39
Height over-all (ft-in.)	11-6
Inside width (ft-in.)	9-5 $\frac{1}{4}$
Outside width (ft)	10
Truck centers (ft-in.)	59-6
Truck wheel base (ft-in.)	8-6
Cross-overs	No. 7
Radius of curvature (ft)	250

upper surface of the baggage rack, the ceiling, and half the air duct. The panels are connected between each window with a single extruded aluminum molding. Fiberglass insulation is used behind the panels.

The desired color is built into the panels and no painting is required, thus contributing substantially to lower maintenance costs. The hard wearing surface will resist normal surface scuffing. Should repairs be required, they can be made in place or the entire panel can be replaced. In the washrooms, a single reinforced plastic piece combines the outer wall lining with the hopper and wash basin enclosures and provides for towel disposal, lights, towel dispenser and mirror. Both the hopper and washbasin are formed of fiberglass.

No Shades Required

Interior partitions are of micarta-faced plywood. The safety glass windows have their upper areas deeply tinted so that no shades are required. They are glazed directly into the openings with rubber mouldings. The 100-gal laminated-plastic water tank is located overhead above the lavatories so that no anti-freeze protection will be required. Vinyl plastic, non-corrosive piping is used which will not burst if it should freeze.

The air duct is covered by unit light panels projecting downward to provide a slot for air distribution. These panels mount a double row of 60-in. fluorescent tubes with starters and wiring. The panels are faced with sheets of silvered "mylar" making high efficiency reflection behind the tubes. The light fixtures are cor-

rugated, translucent polyester plastic strips held in place by vinyl-covered metal bands. A light level of nearly 40 ft candles is provided at the reading plane.

Seats on the "Pioneer III" are fixed, semi-bucket type with heat-sealed vinyl-foam cushioned upholstery developed especially for the car by U. S. Rubber. Strength of the single-piece, molded, glass-reinforced, double plastic seat is provided by the shape. It is mounted on an aluminum tube base welded to cast aluminum wall bracket and seat pedestal. The upholstery is easily removed and replaced.

Head-end power for this car can come from a locomotive with auxiliary power plants, or from a power car similarly equipped. A part of a power car could serve as a baggage car. Train lines are for 440-v, 60 cycle, 3-phase a-c. A control line would open a breaker on the power source before the jumpers between cars are separated. Also the control system provides for serial starting of air conditioning equipment. In each coach locker is a dry rectifier for charging the 32-v storage battery which supplies d-c for incandescent lighting at platforms, passageways and washrooms, and for car emergency lighting.

At the vestibule end of the car there is an enlarged entrance aisle. On one side are luggage shelves and



WASHROOM assembly is single-piece reinforced plastic structure with provision for assembly of all parts, piping and wiring before unit is installed in car.

water cooler. The air conditioning equipment and electric lockers are on the opposite side. These passage walls are of fluted, stainless-faced plymetal.

The air conditioning cabinet has the compressor and condenser housed in its lower part. The condenser and fan are mounted to swing out from an opening in the side of the car for maintenance or replacement. The opening then gives access to the high-speed, sealed, Safety-Carrier compressor and its induction motor, which are track-mounted so they can be brought out for easy exchange. Flexible metallic hoses are extensively used, and the entire compartment is lined with plastic and separated from the car's interior paneling with sound-deadening isofoam.

Fresh and recirculated air are

separately filtered and mixed in a plenum before passing through the track-mounted evaporator which is installed like the compressor for easy maintenance. Refrigerant piping has been brought to a minimum, increasing efficiency and simplifying maintenance. Air is drawn through the filters and evaporator by a single large blower and delivered through a transition duct to the center-ceiling duct for distribution. Heating is supplied by steam train line, and is distributed to the overhead and floor systems through modified Vapor Uni-zone controls.

The New York LWE electro-pneumatic, straight air system is used with the Budd-designed variable load attachment previously described. Control of maximum brake cylinder pressures is particularly important in a light weight car where load

variations are great. The e-p control gives instant application on all cars of a consist, and is followed up by a straight air application through the pneumatic system. These cars cannot be train lined with conventional equipment having automatic brakes for regular service, although Budd "Pioneers" could be equipped with any style of brakes. The LWE brakes will respond only to an emergency application of automatic equipment.

The car and its components have undergone a lengthy series of laboratory tests, as well as tests in actual service to determine riding qualities, braking efficiency, and noise level. Budd, satisfied that "Pioneer III" more than fills its original assignment as a suburban service unit, is now offering it for all types of railroad passenger applications.

Railroading

After Hours

The Big Small Contest

Who is this man Joseph T. Small; and why is he donating \$2500 of his own money—to bring out new ideas for solution of important phases of the problem of freight car supply? A lot of people have asked me that question.

We announced Mr. Small's offer of prizes in our issue of July 9, page 41. What he wants are ideas on (1) a system of car ownership and distribution which will improve car supply and (2) a better design of freight car.

The high caliber of the men who have agreed to be judges in the contest gives evidence of the potential importance which able transportation people perceive in this exploratory enterprise.

One of the most heartening things about railroading is that it commands the loyalty of men like Joe Small — fellows who have a deep-seated interest in the country's welfare, extending far beyond considerations of personal gain.

Contributions like this lie outside the realm of charity—where donations are often motivated more by a

by
James G.
Lynne



Editor,
Railway
Age

sense of duty than by enthusiasm. You find spontaneous donors, of course, to ventures in music, the theater and other arts; or to educational institutions—but how many *businesses* are there which command this kind of unselfish loyalty and enthusiasm?

Joe Small is a securities analyst associated with the firm of Paine, Webber, Jackson & Curtis. He is a native of Maine and a 1925 graduate in economics of Bowdoin. He joined Paine, Webber in 1929 and became a specialist on railroads a couple of years later—but his interest in railroads came before that, and he's been a subscriber to *Railway Age* since 1927, that is, practically throughout his business career.

A deep student—on the ground—of railroad properties, as well as of their securities, Joe is also keenly interested in their problems. He noted that the contests sponsored by

Warren Brown and this paper (on "Inherent Advantages" and "Traditional Differentials" in 1954 and 1955) brought to light a lot of original thinking—so he thought he'd like to get into a similar act on other problems with some of his own money. I hope his generosity may arouse emulation.

Close Connections

I went westward through St. Louis a couple of weeks ago on a close connection—only 10 minutes—and the train I went in on was late. The Pullman conductor on this train told me there was a good chance, but no actual assurance, that the train I wanted to catch would be held for the connection—which is what actually happened, but I didn't know my luck till we got into St. Louis. There are undoubtedly specific rules which are followed in holding trains—e.g., number of passengers and maximum delay—so it should usually be possible to tell passengers positively, one way or another, whether connections will be held. It is attention to such small details which is the surest way of making firm friends for the railroads.

GROWING, PROSPEROUS TOWN...

... Gets DeLuxe Station



▲ 44 YEARS AGO—

When this station of the Florida East Coast was built, the town of Fort Lauderdale barely had a population of 200 persons, and the facilities provided by this structure were more than adequate.



▲ **TODAY—** Fort Lauderdale has 75,000 inhabitants. These modern facilities, more in keeping with the locale and other structures in town, were constructed by the FEC and opened for service on June 2. Set back from the track platforms, the main building has an arcade

containing luggage lockers and telephone booths. On one side is the baggage room and on the other are the waiting rooms, the ticket office and the rest rooms. The large roofed portico serves as an open-air waiting room and enhances the modern motif.



WAITING ROOM of the new station contains metal-frame chairs and divans with plastic-covered foam-rubber upholstery in gay colors to give it a festive, cocktail-lounge atmosphere.



A NEW FREIGHTHOUSE also was constructed, on the opposite side of the tracks. Besides the usual ramp and loading platforms, it contains general office space and two private offices for local freight-traffic staff.

Citico Yard Features Better Car

- Receiving yard is long enough to permit humping whole trains.
- Smoke and gas detection system locates fires, activates alarms and sets off flame-dousing equipment.
- Cars are classified at four-a-minute pace guided by monitor controls with provision for "pegging" couplers in line, oiling journals automatically.
- Four-channel radio, a two-mile pneumatic tube for waybills, and talk-back loudspeakers every 600 feet help "pass the word."
- "Movie" film, tied in with TV number grabber, provides car movement record.
- Mercury vapor street-lighting lamps give "daylight" after dark.

Citico, latest of the Southern's new retarder yards, has the economic asset of being able to deal with a fluctuating traffic load with a normal working force and without peaks in operating costs. Operating costs related to car through-put have been cut. Average yard time has been reduced by five hours.

This new gravity classification yard, at Chattanooga, Tenn., works closely with modern postwar retarder classification yards at Knoxville and Birmingham, and will relate its operation with one now under construction at Atlanta. These facilities block cars through to destination or point of interchange; their location, size and design were planned on an integrated, system-wide scheme of classification.

Five routes of the Southern system radiate out of Chattanooga. About 26 road freights arrive, and the same

number depart, daily. Some 14 diesel switchers work the yard and local industrial area.

Switching at Chattanooga was done previously in a flat yard near the south end of the new yard. Track layout was inadequate, trains were made up of cars destined to the next terminal, without blocking. Switching on 350 to 500 cars for interchange connections and industries was left to five small yards scattered over the city. Some of those yards took space needed for new industries and warehouses.

In the new yard, 16 classifications are made for deliveries to two interchange connections, one to the freight house, and 13 to industrial runs in Chattanooga. The small yards were closed. Cars are now delivered to industries about 5 hours earlier than before. Previously, cars that arrived after 1 a.m. could not be

spotted in industries by 7 a.m. Now cars arriving as late as 4 or 5 a.m. are spotted before 7 a.m. A car of merchandise pulled from an industry track in Cincinnati by 4 p.m., arrives in Chattanooga yard by 3:30 a.m., is classified by 5 a.m., and spotted at consignee's factory before 7 a.m. Cars pulled from Chattanooga industries arrive at the yard about 4 p.m., compared with 10 p.m. previously. These cars now get out on earlier trains. Thus, in some instances, as much as 12 to 15 hours are saved.

Formerly, Chattanooga yard made up trains for Cincinnati, with little, if any, blocking. Now cars for Cincinnati are in ten separate blocks for delivery in Cincinnati without classification there.

Formerly, northbound cars out of Chattanooga destined for the line west from Danville, Ky., to Louisville and St. Louis, were set off at Danville, where switching was done as required for points west. Now, at Chattanooga, cars are classified in five blocks for the Danville-Louisville-St. Louis line.

Classifications made at Chattanooga and at Sevier yard (Knoxville) have also reduced the switching at Oakdale. At Chattanooga, cars for Jacksonville, Fla., are blocked for SAL, ACL, FEC and Southern, as are empty refrigerators being moved to Jacksonville for distribution beyond. Thus a train can be made for through movement to Jacksonville, and be delivered to interchange without time being lost at any intervening terminal or division point, or for switching on arrival at Jacksonville.

Yards' Production

Provision had to be made for blocking cars to move from Chattanooga to Knoxville or to Birmingham for classifications in yards there. This is taken care of by the 194-car classification tracks No. 1 and No. 2 at the north side of the classification yard. Trains are made up and depart directly from these tracks without going through the departure yard.

The new yard is doing more refined and faster classification work

Movement

than the flat facility. At 2 mph, which is about 4 cars per minute, and with the hump in operation 45 min, each hour, cars are classified at the rate of about 180 per hour. Trains arrive in peaks, in one instance 15 trains arrived within 4 hours. Cars classified range from 2,000 to 3,153 in 24 hours. On one third trick, 1,260 cars were put over the hump.

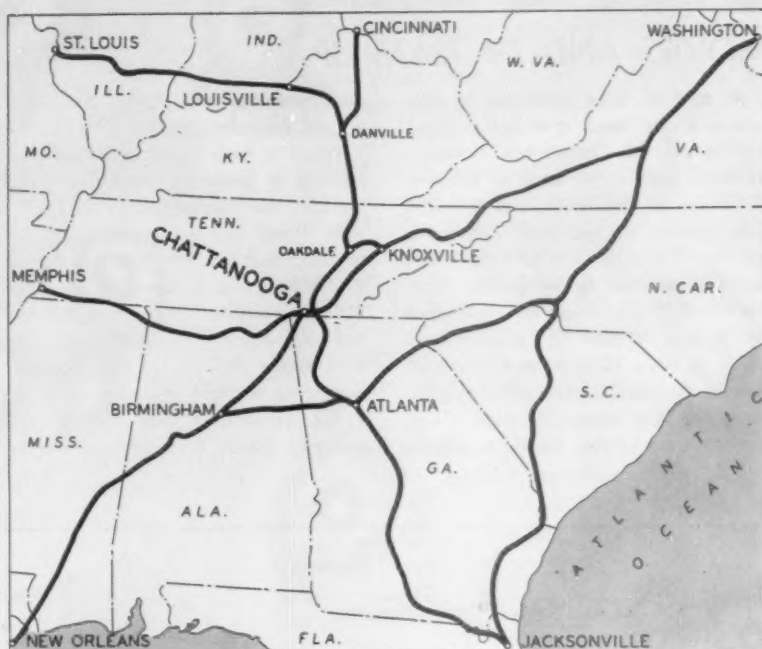
Physical Layout

The new receiving yard, including 12 tracks with total capacity of 1,772 cars, is about 1.6 miles long. Requisites for operation are: (1) enough tracks so that all incoming trains could pull in promptly on arrival; (2) some tracks long enough to hold a whole train of up to 192 cars, and also permitting the hump engine to handle a complete train in one "push"; and (3), entrances arranged so trains can pull in without interfering with movement of hump engine when pushing cars from receiving yard.

At the north end, the receiving yard has two entrances. If the hump engine is pushing cars from a track in the east half of the receiving yard, an incoming train will be routed via the west entrance to some track in the west half of the yard. To permit such train moves, double ladder tracks were installed. The entrance

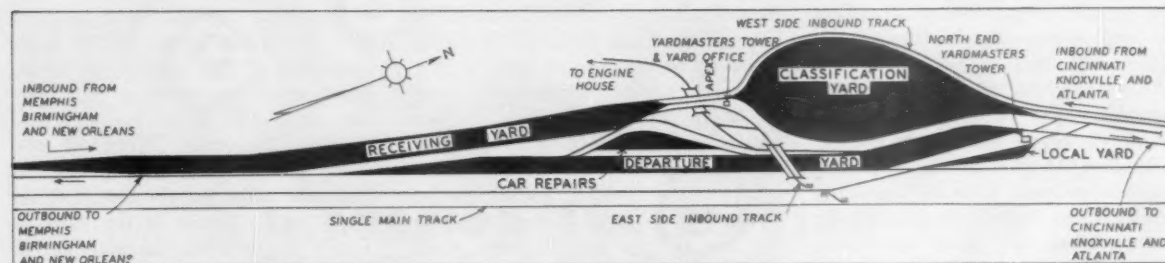


▲ NEW RETARDER YARD WORKS WITH ...



MORE ON NEXT PAGE ►

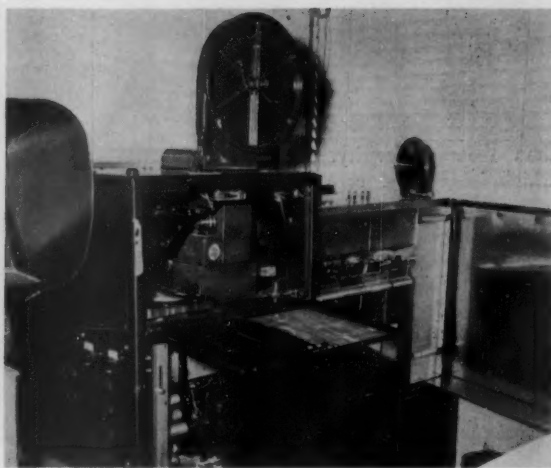
... SOUTHERN'S INTEGRATED SYSTEM ▲



PHYSICAL LAYOUT keeps in & out movements from conflicting



THREE TELEVISION RECEIVERS in yard clerk's office "see" cars of incoming trains, so that clerk can "grab" car numbers.



MOTION-PICTURE MACHINE, directed at small television receiver screen, makes a film record of cars passing yard entrance two miles away.

MOVIES AND TV TEAM UP

At each of three entrances to Citico's receiving yard, a television camera "grabs" car initials and numbers as trains pull in. At each of the two entrances at the north end there is one camera. At the south end there are two; if one camera fails, the other can be switched in by control from the office. The cameras are connected by closed circuits in underground cable to three 12-in. screen television sets in the yard clerk's office in the tower at the hump. A yard clerk, watching the screen, reads car initials

and numbers, and "talks 'em" into a tape recording machine.

When a train is approaching and passing a camera during darkness, the cars are illuminated by six 1,500-watt flood lamps 20 ft from the ground, and by four 150-watt lamps 2½ ft from the ground, which gives 250 foot-candles of illumination on the cars. An automatic device opens and closes the iris of the camera, according to light intensity.

The yard clerk can connect the incoming circuit from any camera to

any of the receiving sets. Any incoming circuit can be connected to a machine including a small television screen.

A motion picture camera takes a "movie" of this screen, to record cars passing at the remote point. About 44 ft of 16mm film is used for a 100-car train at 12 mph. The film is exposed, developed and delivered dry within four minutes. It can then be run through a special viewer, so the clerk can read off the car initials and numbers at his convenience. TV and motion picture equipment was furnished by RCA.

NEW CITICO YARD (continued)

to the east half of the receiving yard required construction of a connecting track from main line to the yard, including a bridge over the departure yard. Trains from Memphis and Birmingham arrive at the south end of the receiving yard, and therefore can pull into any track without interfering with other moves.

Road engines, when cut off from arriving trains, move to the engine-house via routes that do not conflict with hump engine moves. Likewise engines en route from the servicing tracks to go on departing trains, do not interfere with hump operations. To attain these objectives, a single-track underpass was built under the leads from the receiving yard to the

classification yard on the north end.

The classification yard is directly north of the north end of the receiving yard, so that the hump engine can push cars from any receiving track directly over the hump without a preliminary "pull-back" move. The ascending grade from the receiving yard up to the crest is light, so that a hump engine, consisting of two 1,000-hp units with booster, can easily push as many as 200 cars at constant speed of 2 mph.

An extra turnout, leading to the west, just below the crest, connects to two sidings, one to serve stock feed pens, and the other for bad order cars and cars carrying such loading as explosives. The cars can be

pulled from the north end of these tracks so as not to interrupt humping, in operations in the classification yard.

A short retarder, 16½ ft long, just below the crest, is used to bunch slack, to aid in pulling a tight coupling pin.

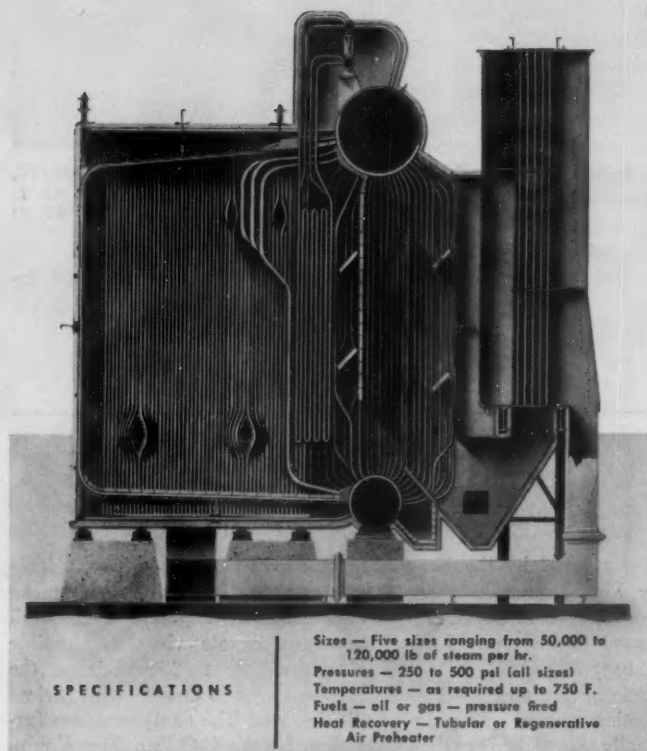
Beginning 71½ ft from the crest is a motion-weighting 105-ft track scale on a 3% descending grade. This scale has a Cox & Stevens automatic electronic weight recording apparatus. Apex of the hump is only 17 ft higher than the clearance point on the classification track in the center of the yard—a factor in reducing the number of retarders required.

The master retarder, 148½ ft long
(Continued on page 48)

These performance-proved features
make Combustion's

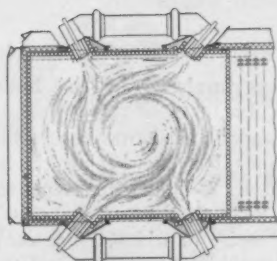
NEW VU-55

today's outstanding boiler buy for capacities
from 50,000 to 120,000 lb of steam per hour!

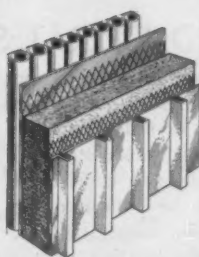


SPECIFICATIONS

Sizes — Five sizes ranging from 50,000 to 120,000 lb of steam per hr.
Pressures — 250 to 500 psi (all sizes)
Temperatures — as required up to 750 F.
Fuels — oil or gas — pressure fired
Heat Recovery — Tubular or Regenerative Air Preheater



PLAN VIEW OF FURNACE showing arrangement of burners for tangential firing. Flame streams from the four burners impinge upon one another at high velocity, creating a turbulence unattainable by any other method of firing. The result is rapid and complete combustion. As the gases spiral upward, they sweep all furnace heating surfaces, assuring a high rate of heat absorption.



PERSPECTIVE OF FURNACE WALL. Construction consists of tangent tubes backed up successively by welded steel panels, 4 inches of high quality insulating material and an outer steel casing formed as shown to provide adequately for expansion and assure ample strength. Low heat loss and the tightness required for pressure firing are assured by this welded, double-wall construction.

The VU-55 — a development of Combustion's basic Vertical Unit design — offers features never before available in a boiler of its capacity range. If your steam needs call for a unit in the 50,000 to 120,000-lb class, you will find it worth while to consider the economic and operating advantages assured by these VU-55 features:

TANGENTIAL FIRING. More than 20 years of application experience have established the exceptional advantages of tangential firing, illustrated and briefly described below. About 90 percent of Combustion's large utility installations use this advanced method of firing.

DOUBLE WALL, PRESSURIZED CASING. The latest development in casing construction for pressure firing of boilers in the size class of the VU-55, this casing, as illustrated and described below, is designed to assure lifetime tightness with minimum heat loss. Pressure firing permits the elimination of an induced draft fan with its attendant operating and maintenance costs.

TANGENT FURNACE TUBES. The VU-55's furnace tube arrangement provides complete heat-absorbing, water-cooled protection on all furnace walls. Furnace maintenance is minimized, since the design eliminates all exposed refractory surfaces.

HIGH STEAM QUALITY. Equipped with a large (60-in.) steam drum, the VU-55 has generous water capacity and steam reservoir space. C-E drum internals assure high quality steam at all ratings.

STREAMLINED EXTERIOR. The overall appearance of the VU-55 reflects the efforts of its designers to achieve a completely unobstructed casing, while retaining adequate access wherever required and every facility for convenient operation. There are no outside downcomer tubes, and ducts from air heater to burners are beneath the furnace floor.

Your request for further information on the
VU-55 Boiler will receive prompt attention

COMBUSTION ENGINEERING

Combustion Engineering Building, 200 Madison Avenue, New York 16, N. Y.

CANADA: COMBUSTION ENGINEERING-SUPERHEATER LTD.



B-8708

STEAM GENERATING UNITS; NUCLEAR REACTORS; PAPER MILL EQUIPMENT; PULVERIZERS; FLASH DRYING SYSTEMS; PRESSURE VESSELS; DOMESTIC WATER HEATERS; SOIL PIPE

NEW CONCEPT OF YARD LIGHTING

Yard lighting gives an average of one foot-candle for general yard areas, with 2.5 f.c. along switching leads, 5 f.c. at the hump and retarder areas, and 10 f.c. at the car repair platform. General Electric street lighting luminaries are bracket mounted or suspended from Copperweld cables supported by creosoted wood poles. Luminaries are generally mounted 40 ft above the tracks, with 42 ft spacing on the cables and 300 ft between cables for one f.c. intensity. Where higher intensity is required, spacing and mounting height are decreased.

The straight series system, without ballast, is used for the long strings in the classification yard, having 15 to

25 luminaries per circuit. Power is supplied by a 3.2 amp. constant-current transformer of the moving coil type at approximately 5,000 volts open circuit, which is reduced to approximately 2,500 volts to ground by the circuit center ground connection. Standard multiple system, with individual ballasts and 220 volt supply, is used for other luminaries.

Mercury vapor lamps are rated 400 watts and are controlled in groups or strings by photo electric relays. Shields are provided on luminaries in the classification yard, adjacent forwarding yard, and the north end of the receiving yard, to prevent glare to men in the towers. In the areas requiring special lighting, supple-



MERCURY-VAPOR LAMP UNITS, each rated at 400 watts, are 42 ft apart on overhead supports 40 ft above track level.

mental illumination is provided by reflector-type and sodium vapor lights.

NEW CITICO YARD (continued)

on the main lead down the hump, is partly on the 5% descending grade and extends through a vertical curve to the .89% grade. A final retarder, 99 ft long, is on the lead to each of seven groups of tracks. Four of the groups have 9 tracks each, and three have 8. The group on the north side has 6 tracks, with space for 2 more to be added.

Classification tracks have a descending grade of .15%. For cars which enter a classification track at 4 to 5 mph, the .15% grade will keep them moving without accelerating.

The retarders are automatically controlled by electronic and radar devices. The master retarder releases each car or cut at about 10½ mph. Each group retarder is individually controlled and releases cars so that, when they pass the clearance point on their respective tracks, the speed will be from 4 to 5 mph.

A monitor control machine manned by a retarder operator is in a tower on the west side of the lead. Principal duty of the operator is to monitor operations, and to regulate the modification settings to compensate for variations in wind, weather and rail conditions. The power switch machines, retarders and con-

trol systems, furnished by the General Railway Signal Company, are practically the same as in the Southern Pacific yard in Houston (Railway Age, January 30).

An automatic smoke and combustion gas detection system, and built-in automatically controlled carbon dioxide fire extinguishing equip-

ment, are in the retarder tower. This system almost instantly detects smoke and combustion gases, and simultaneously operates visual and audible alarms. After a 20-sec delay, the involved area is flooded with carbon dioxide gas. The equipment was furnished by the C-O-Two Fire Equipment Co., Newark, N. J.

HOW YARD OPERATES

When the caboose of a train from Memphis or Birmingham approaches the yard entrance (2 miles from the yard office), the conductor steps off and places waybills and consist list in a carrier that he puts into the transmitter of a 6-in. pneumatic tube, which delivers the carrier to the yard office within 9 min. The waybills are tubed up to the yard clerk.

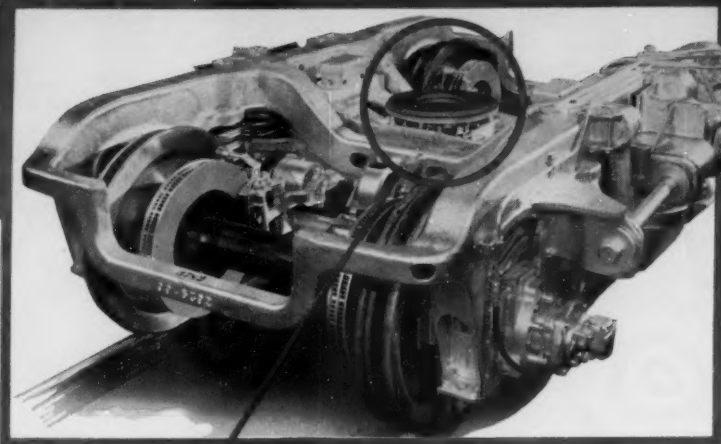
For cars pulled from freighthouses and industries in Chattanooga, the information for making waybills is in the freight agent's offices downtown. As a clerk in the agent's office types a waybill form on a Teletype machine, an original waybill form is typed simultaneously on a page printer in the yard office. A bunch of such bills are tubed to the switch-list clerk. The pneumatic tube equip-

ment was furnished by the Kelly Systems, Inc.

The clerk in the tower checks the waybills against the list which he received via TV and the tape recording. He then types the switch list, 13 copies of which, made on a "ditto" machine, are delivered by 3-in. tubes to the foreman's office, the retarder control tower, the yardmaster's office, the scale clerk, and to various other offices.

As cars pass down the hump, a set of four nozzles, controlled automatically, squirts hot oil into each open journal box. A carman, with a special air-operated device, drives a small Celotex peg behind the tongue in the coupler at leading end of each car, preventing its drifting closed. (Continued on page 52)

Passengers buy riding comfort...



provide
a more comfortable ride
and increase your revenue

with **Commonwealth Central Bearings***

- eliminate lateral shimmy
- increase wheel mileage
- reduce operating costs

for existing or new equipment

Now... a dynamic development that goes after increased revenue with the benefits rail passengers are looking for! Passengers buy *comfort*... and you can give them more of it with *Central Bearings*.

Central Bearings offer a simple, positive way to

provide smoother, more comfortable riding of *existing* passenger cars, and the best in travel comfort for your new equipment. They have proven themselves on hundreds of cars... and are on order for many more.

Truck shimmy and side bearing problems are eliminated by *Central Bearings*. Mileage between wheel turnings is greatly increased and cost reduced. Specify them for your new equipment. Apply them now to your existing cars at surprising low costs... sell the new comfort... and watch passenger volume grow!

*Central Bearings occupy the space formerly used by center plates. They eliminate side bearings and require no lubrication. Available in a simple, easy-to-install "package", so they may readily be applied to existing cars.



GENERAL STEEL CASTINGS

GRANITE CITY, ILL.

EDDYSTONE, PA.




24 RL—the road locomotive brake that can be kept modern

Sectional construction, as followed in the 24 RL Brake Valves, provides for the addition of new or improved functions merely by the substitution of sections. The advantage, of course, is that the brake equipment can be kept modern with minimum investment as compared to entire brake valve replacement.

The most recent improvement that can be provided in this manner is the brake pipe pressure maintaining feature, which offers pronounced improvement in train brake operation plus outstanding maintenance economies that develop from uniform distribution of braking pressure throughout the train.

This feature can be incorporated in any D-24 Type Brake Valve now in service by replacing the existing Filling Piece Portion with the Conversion Filling Piece shown in color in the illustration. Write for our Circular Notice No. 1130 which gives complete details.

Westinghouse Air Brake COMPANY

AIR BRAKE DIVISION  WILMERDING, PENNA.



**This car
is gone...**



*Photo—courtesy
American Car and
Foundry Division
ACF Industries,
Incorporated*

but its battery is still in service today!

RAILROADS have consistently reported a high average life for the EDISON batteries they use. In the case of one railroad, service life averaged 26.18 years; in another, 18.04 years; still another averaged 22.4 years—and one battery was 40 years old! *Proof that EDISON batteries last far longer than other types!*

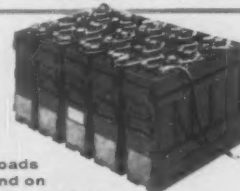
In addition, it is possible to further extend the useful life of an EDISON battery by decreasing the load requirement. For example, a 110-volt EDISON battery which has had a normal service life on an air-conditioned car, can be reassembled into 32-volt

batteries for use under lesser load requirements, such as a head-end car. Many car-lighting batteries have been transferred to smaller load duties such as a power source for railway caboose communication thus giving many additional years of dependable and unfailing service.

Throughout their long service life, the exclusive design of EDISON batteries protects you from "sudden failure" due to physical or operating abuse. This is another reason why you can rely on EDISON for superior performance and lower operating costs.

For further information, call your

local Edison sales engineer or write
Edison Storage Battery Division
Thomas A. Edison, Incorporated
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depend on
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- operating power on industrial trucks •
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You get more dependable power—lower over-all cost with

EDISON
NICKEL—IRON—ALKALINE
STORAGE BATTERIES



NEW CITICO YARD (continued from page 48)

Pegging couplers, says the Southern, saves an average of 10 min. in readying 50 cars for a track pull.

The departure yard for road trains has 10 tracks ranging from 100 to 190 car capacity, totaling 1,547 cars. Local freight trains and cuts for delivery in Chattanooga are made up in the local yard, having 14 tracks

with a total capacity of 352 cars.

A yard engine pulls cars out of the north end of the classification yard tracks onto a lead, from which the cars are pushed to a track in the departure yard to make up a train. When the leading car being pushed passes a point 400 ft from the far end of the track, the green light in a

small "shove" signal at the right of the track within view of the yard crew, is extinguished, as a warning to stop pushing.

As cars are pushed into a departure track, a clerk checks his list to see that cars are in the correct sequence. The list is then sent by pneumatic tube to the yard office where the waybills are assembled in train sequence. A Recordak machine is used to make a film record of the waybills of all cars in the train.

COMMUNICATIONS KEEP 'EM MOVING

Communications facilities in the yard—including intercoms, talkback speakers and radio—that are involved with general yard operations, are all centered in the yardmaster's office on the top floor of a tower at the hump. The control console and relays are furnished by the North Electric Man-

ufacturing Company, Galion, Ohio, and the amplifiers by the Electronic Communication Equipment Company, Chicago. In the area at the north end of the yard the operations are under the direction of a yardmaster in a 30-ft tower which includes a console for a talk-back loudspeaker system.



YARD FOREMAN uses "Dick Tracy" radio transmitter to talk to his engineer.

The departure yard tracks are each over a mile long. Car inspectors working from both ends of a train can talk to each other and to foreman and yardmaster.

Ground-line loudspeakers, mounted at 600-ft intervals along each track, are connected to a circuit, without going through any office. When a man depresses a footswitch at any of these speakers, it is converted to a microphone. Speech into the microphones is amplified and heard on all loudspeakers in the departure yard. The man called can reply over the talk-back speaker nearest to him. Conversations on the ground-line speaker in the receiving and departure yards are repeated by a loudspeaker in the office of the car foreman.

Locomotives used in the yard have four-channel radio. One channel is for conversations with the yardmaster at the hump; a second is for conversations between the hump engine and the foreman at the crest; a third is for communications with road engines; and a fourth is for the "Dick Tracy" system.

The foreman in charge of each crew at the north end has a lightweight, battery-operated, portable radio transmitter. Energy transmitted from one of these "Dick Tracy" sets is picked up by both of two fixed radio receiving stations, and the strongest takes over. The signal is sent by wire to a third centrally located radio transmitter station operating at yard frequency, to be heard by the engineer. Radio used on the locomotives was made by Westinghouse, the "Dick Tracys" and the fixed station radio by Motorola.



DESKWORK aplenty filled much of a freight agent's day before new accounting system was introduced. Morrisville, Pa., agent W. J. Cook (above) says it cost him hours that could have been spent promoting PRR business.



LEGWORK is the key to productive sales work and Mr. Cook takes advantage of the added time he's been given by getting out to make the calls he may have had to skimp on in the past.

Freight Agents Get Time To . . .

Get Out and Sell

. . . on the PRR, which is now programming a network of centralized, modern-equipped accounting bureaus fashioned after a "pilot" installation at Trenton

"Call, call, call and sell, sell, sell!"

With that slogan, the sales vice-president of one of the country's top manufacturing companies launched an intensive campaign to better his firm's competitive position soon after World War II.

He told his key sales people: "If you make the calls, you'll make the sales."

The Pennsylvania is making it possible for its sales people to apply the principles implied in that slogan by freeing them from the desk-anchoring duties of burdensome paper work.

A new accounting setup, tested at Trenton, N. J., and found worthwhile, makes such an approach possible. One of the prize projects of the PRR's new Methods & Procedures Department, the idea has proved so satisfactory that it is being readied right now for extension all along the eastern seaboard.

Potential of the new accounting

arrangement—it is based on use of punchcard office machines that easily tie in with research programs and speedy communications—is thought to be almost boundless by John P. Weyrick, the Pennsy's M&P director. He feels that this potential has scarcely been tapped with establishment of the Trenton bureau but will expand dramatically as the system itself is expanded.

Program Objective

The goal of the overall program is electronic freight agency accounting, but, Mr. Weyrick points out, the striking effect thus far is the intensification of sales work it makes possible.

A freight agent, handicapped heretofore by the many details of billing and bookkeeping, often had little time to devote to business solicitation and service work. With much of the time-consuming paperwork re-

moved from his hands and placed in a central accounting agency, however, the agent now has as much as two additional hours a day for sales work, according to Wilbur G. Miller, head of the "task force" that set up the Trenton pilot operation.

He said Trenton was selected to test the system because it is "the hub of a representative freight area" and permitted an accurate appraisal of how the operation functions.

The Trenton bureau—established in the freight station there—serves 48 agencies, most of them in New Jersey but a few in nearby Pennsylvania. Agents at these points are relieved, among other things, of making up freight bills on inbound shipments, accepting payments from credit customers, keeping extensive financial records, and preparing records for the freight traffic auditor. Cash receipts are deposited in the agency's bank and a daily report is filed. The agent also continues to



◀ ORGANIZER

First unit in proposed network of centralized accounting bureaus, Trenton pilot setup was organized by W. G. Miller of Methods & Procedures Department, shown here checking new IBM equipment.

CENTRALIZED OPERATION ▶

Modern machines make centralized operation practicable, offer almost unlimited potential for wider uses of data funneled into bureaus from freight stations.



prepare demurrage reports and out-bound billing.

Where the change in procedures made personnel reductions possible in the field agencies, employees were permitted to follow their jobs as much as possible to the Trenton bureau. Here, a training program was instituted to acquaint personnel with the new system as well as with the new business machines. A staff of 27 finally was settled on for the operation.

The PRR found IBM equipment best suited for its purposes and was able to equip an old record room with an air conditioning unit to maintain temperatures needed for operation of the equipment. The entire Trenton station was refurbished and decorated uniformly in setting up the bureau.

Having been on the alert throughout the planning and installation of the Trenton bureau for experiences that could be useful in setting up later bureaus, Mr. Miller and his task force were able to work up a detailed schedule of the steps that must be followed—in the precise order—to achieve maximum efficiency.

One of the very first such steps to be taken, after the site of the new bureau is established, is to send out a lengthy questionnaire to each agency station that is to be brought into the bureau's orbit. The questionnaire covers personnel matters as well as the regular business handled by the agency, and the final makeup of the bureau is determined in large measure from the information thus obtained. The next bureau to be set up will be at New York, with others

at Philadelphia, Baltimore and Harrisburg to be established as soon as possible, Mr. Miller said.

The system will not be confined to regional boundaries and the various data collected in each bureau will be put to work in many fields, as Mr. Weyrick indicated with the comment that "the most logical way to get into the electronic computers is via punchcards" such as are used in the Trenton bureau. Analysis of traffic trends and patterns of movement is only a part of the potential, Mr. Miller suggested.

Meanwhile, Mr. Weyrick noted, the central bureau has accomplished a step-up in overall accounting procedures and greatly expedited inter-line settlements. These tangible benefits are in addition to "relieving the local agent for sales work."

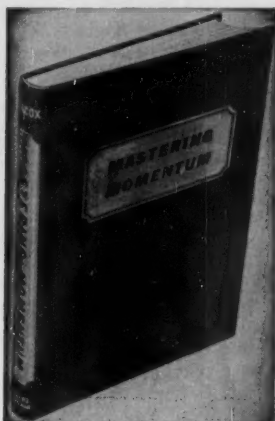


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By
Lewis K. Sillcox

Honorary Vice Chairman
New York Air Brake Co.

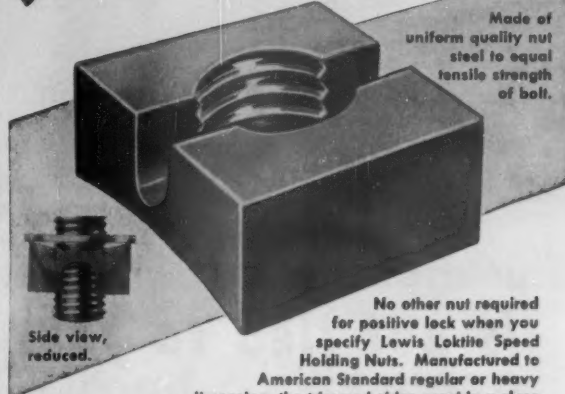
Based on the author's lectures at the Massachusetts Institute of Technology and first published in 1941, the scope of this book is far wider than the title, *Mastering Momentum*, suggests. Its six chapters discuss: Mechanics of train operation and braking; Car wheels and axles; Locomotive and car truck design; Rail reaction and riding qualities; Draft gear, and Conclusion. This thorough revision was brought completely up to date in the light of modern practices. 248 pages; 6¼" x 9¼"; 87 illustrations, charts and tables; cloth; \$5.75, postpaid.

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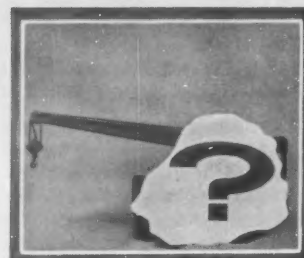
Side view, reduced.

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This modern grader is a big help in keeping maintenance up-to-date... fixes small troubles before they become major problems... saves expense and delays involved in postponement for work-train service.



Land, bordering track shoulders, can be leveled and cleaned regularly by a grader to maintain proper drainage. One man with an Adams slashes your payroll and machinery costs, saves time, eliminates sources of trouble before they develop.

No other grader offers the range of operating speeds found in the Adams

All Adams graders have 8 speeds forward, up to 25 mph (11 speeds including 3 optional "creeper" gears) and 4 in reverse to 13 mph for fast back-up in shuttle-grading.

Double-action hydraulic brakes assure quick, safe stops. When service brake on wheels is applied, brake holds transmission when it stops wheels. Machine won't slip.

Optional equipment adds to usefulness of grader. Scarifier rips out old asphalt, hard-packed dirt, roots, and stones. Dozer blade roots out brush, pushes debris off right-of-way, backfills around culverts, cleans up spillage in yards. Snow plow and wing clear and spread snow in winter.

You can find out for yourself how an Adams moves big-yardage quickly.

A size ADAMS for every need

Model 220 — 60 hp, 14,865 lbs.

Model 330 — 80 hp, 20,500 lbs.

Model 440 — 104 hp, 21,500 lbs.

Model 550 — 123 hp, 23,500 lbs.

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Peoria, Illinois

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Current Publications

FROM THE MANUFACTURERS

OPERATION PROFIT. 43 min., sound, color film. Hyster Company, Dept. RA, 2902 N.E. Clackamas st., Portland 8, Ore.

Describes all modern methods for handling lumber and building materials. Modern techniques for loading and unloading rail cars are shown. Film scenes show wrapped and strapped bundles of lumber handled from flatcar shipment and the unloading of bulkheaded flatcar in 20 minutes. Popular lift truck attachments such as the end-loader, swing-shift, side-shift and extension forks are shown in on-the-job scenes. Organizations interested in viewing the film should contact their nearest Hyster industrial truck dealer, or write to the company at the above address.

AN INTRODUCTION TO THE UNIVAC FILE-COMPUTER SYSTEM. 24 pages, charts. Remington Rand Division, Sperry Rand Corporation, Dept. RA, 315 Fourth ave., New York 10. Free.

Describes the UNIVAC file-computer system and includes a general outline of component units, advantages of the system, and new approaches to production control.

HYPALON SYNTHETIC RUBBER. 8 pages, illustrations. E. I. du Pont de Nemours & Co., Elastomers Division, Dept. RA, Wilmington 98, Del. Free.

How to obtain rubber products with greater resistance to deterioration is described in this booklet for industrial designers and engineers. It tells how "Hypalon" chemical rubber has solved numerous problems in product design and plant maintenance and touches on the composition and manufacture of this versatile new synthetic rubber. It outlines the characteristics that insure outstanding performance under severe service conditions, and shows by examples how these properties have proved advantageous to users of hose, belting, seals, coatings, and other rubber products. No technical data are included since the booklet is not intended as a working tool for rubber technologists.

CAT ELECTRIC SETS FOR POWER AND PROTECTION. 16-pages, illustrations. Caterpillar Tractor Co., Dept. RA, Peoria 8, Ill. (Specify Form No. 31922). Free

The booklet shows many different uses to which these versatile power plants can be put, and some of the reasons why they are especially well suited to the applications. It is illustrated with pictures of actual installations, and cutaway drawings and photographs are used where needed to show why these sets are so well received wherever reliable, economical power is required. The new Caterpillar generators are also shown, and some of the advantages they provide

in the way of compactness, ease of operation and maintenance, reliability and power output are discussed. The booklet is available in English, French, Spanish and Portuguese.

STOP RUST with RUST-OLEUM. 28 pages, illustrations. Rust-Oleum Corporation, Dept. RA, 2799 Oakton st., Evanston, Ill. Free.

The new 1956 catalog is a treatise on rust prevention with illustrations of Rust-Oleum uses and applications throughout industry. Included are 102 color chips showing the many Rust-Oleum colors available in various types of primers, coatings and finishes. Two pages are devoted to Rust-Oleum penetration through rust to bare metal as measured by radioactive tracer techniques, and to the new Rust-Oleum galvinoxide coatings, specially formulated to be applied over new galvanized, aluminum, and terne plate surfaces without etching or excessive weathering.

PERIODICAL ARTICLES

PAYING FOR THE ROLLING STOCK. Business Week, January 28, 1956, pp. 130-134. McGraw-Hill Publishing Company, 330 W. 42nd st., New York 36. Limited supply of tear-sheets available free.

Railroad funded debt has been dropping lately, but equipment obligations are up sharply and seem slated to rise even higher because of the recent boom in new equipment buying.

PENNSYLVANIA RENAISSANCE. Investor's Reader, April 4, 1956, pp. 11-17. Merrill Lynch, Pierce, Fenner & Beane, 70 Pine st., New York 5.

The nation's mightiest carrier moves ahead with new confidence.

CROSS SECTION U.S.A.: RAILROAD TOWN. by Monroe Fry. Esquire, May 1956, pp. 91 et seq. Arnold Gingrich, Pub., 65 E. South Water st., Chicago 1. Single copies, 60c.

A profile of Altoona, Pa., one of the country's leading railroad centers. This city of some 76,500 people is the biggest railroad town in the world. It is in the heart of central Pennsylvania, on the Pennsylvania Railroad's main line. It was founded to be a railroad town and its shops, which now total 125 buildings, dominated the city's economic life for more than a century.

AYDELOTT OF THE RIO GRANDE. Fortune, June 1956, pp. 142-143. Time Inc., 9 Rockefeller Plaza, New York 20. Single copies, \$1.25.

Introducing the new 41-year old chief of the Denver & Rio Grande Western.

TRANSPORTATION IN ROMANIA, BULGARIA AND ALBANIA. News from Behind the Iron Curtain, April 1956, pp. 11-23. Free Europe Press, Free Europe Committee, Inc., 110 W. 57th st., New York 19. Single copies, 25 cents.

Discusses the development and organization of transportation: rail, road, water and air.



road crews move more dirt on rubber

To clean out blow-sand from the right-of-way near a highway overpass 5 miles west of Los Lunas, N.M., the Santa Fe Railroad put a D Tournapull to work.

The rubber-tired "D" was push-loaded by a crawler-tractor. Despite the hard-to-load loose sand and poor footing, the D Tournapull averaged 21 trips per hr. over the 1000' cycle.

The "D" loaded in 75 ft., hauled 650 ft., spread on the run in 75 ft., returned via shortcut of 350 feet. Average load was 5 yds. bank measure. Cycle time, 2 minutes, 40 seconds. Production: 105 yds. per 55-minute hour.

Under good conditions the "D" handled 1250 yds. in 8 hrs.

Sand no menace to bearings

In spite of extensive operation in sand, no wheel-bearing repair or replacement has been needed on any of the D Tournapulls currently operating for the Santa Fe. The "D's" have needed practically no maintenance except for regular lubrication since purchase.

You, too, can benefit with modern, high-speed machines that haul more yards per hour. Why not write us now for the new railroad bulletin that gives complete information on D Tournapull applications for your work? We'll be glad to arrange a demonstration.



Tournapull is easy to operate in either sand or hardpan. It is highly maneuverable, crosses tracks, travels on road-bed easily. Short turning radius allows the machine to work in tight places.

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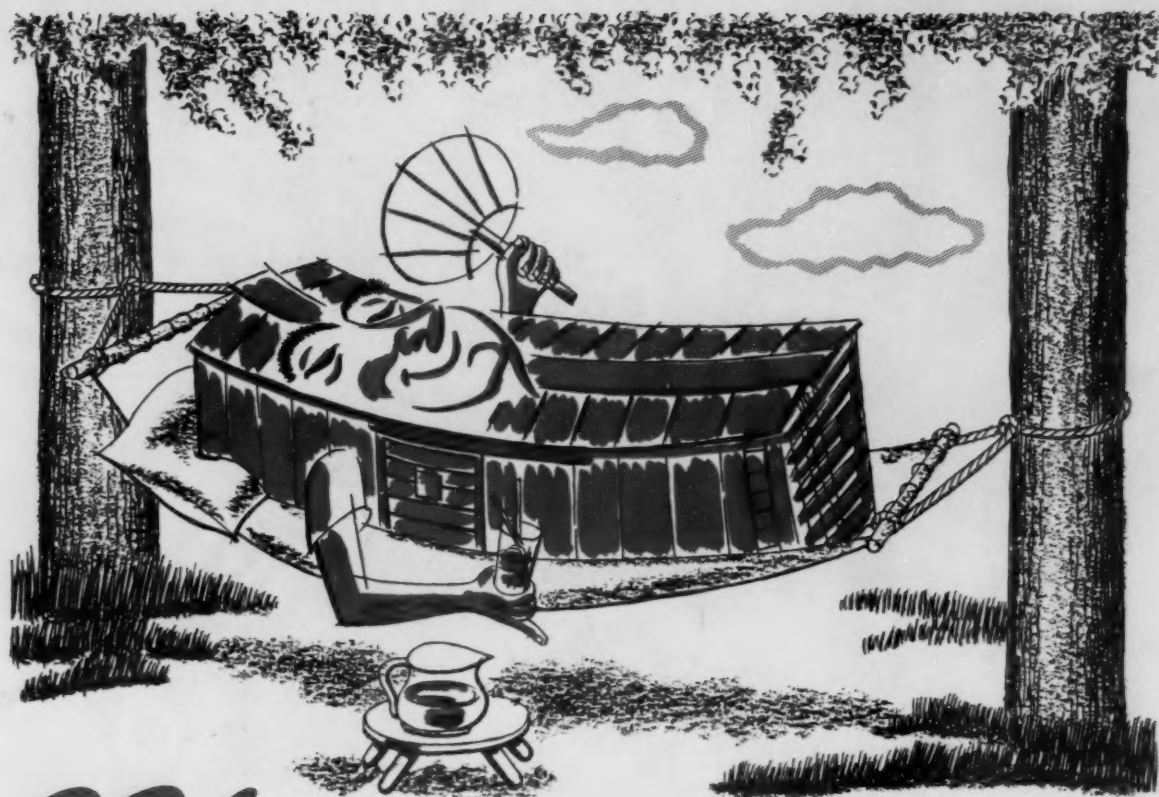
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** From an address by:
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